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Railway Age

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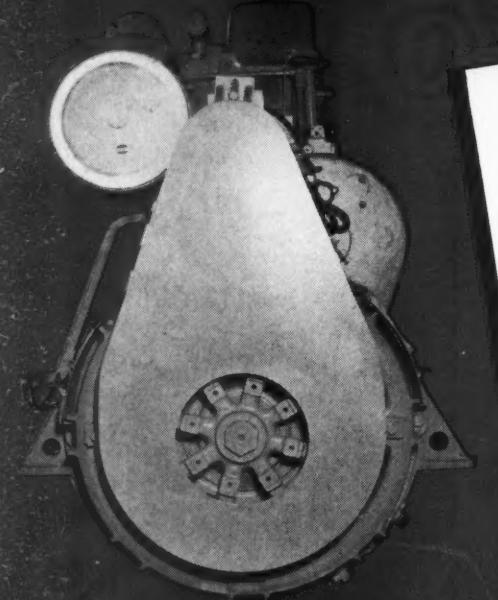
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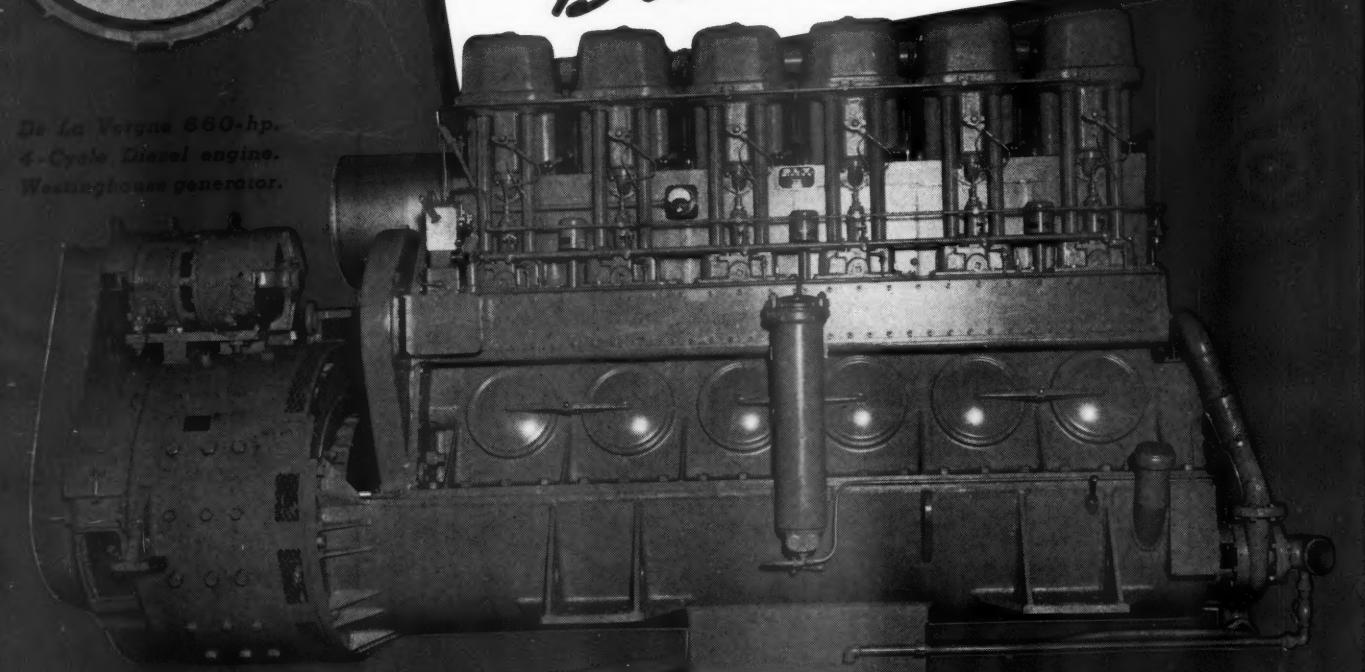
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Philadelphia

Railway Age

Published every Saturday by the Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa., with editorial and executive offices: 30 Church Street, New York, N. Y., and 105 West Adams Street, Chicago, Ill.

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The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)

Subscriptions, including 52 regular weekly issues, and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free. United States, U. S. possessions and Canada: 1 year, \$6.00; 2 years, \$10.00; foreign countries, not including daily editions: 1 year, \$8.00; 2 years, \$14.00.

Single copies, 25 cents each.

H. E. McCandless, Circulation Manager, 30 Church St., New York, N. Y.

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

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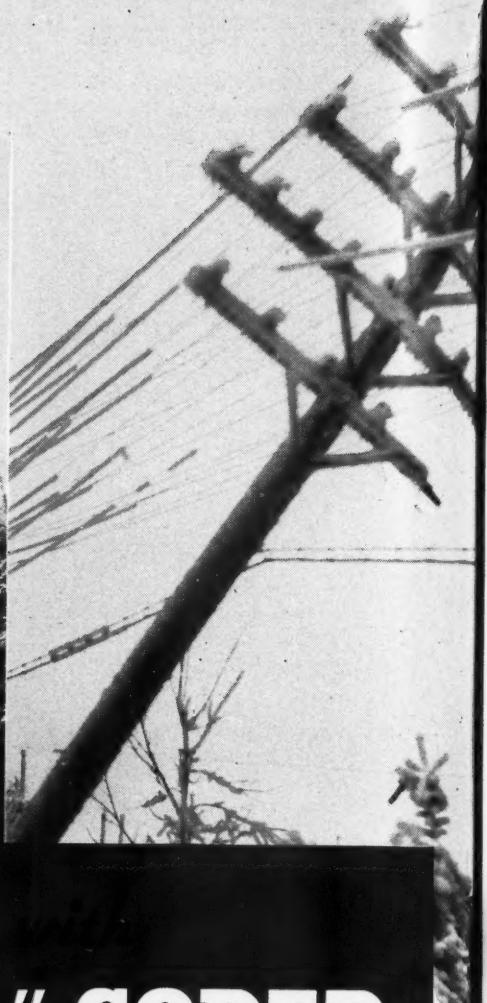
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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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The Week at a Glance

PAID VACATIONS?: None of the leaders of railway labor seems to recognize that the total wages paid to railway employees are not under their control. Figures published herein demonstrate the invariable tendency of total wages paid by the railroads to hover around 47 per cent of gross railway revenues—regardless of whether wage rates are high or low. Railroad employees got 72 per cent more money from the railroads in 1923 (when wage rates were the lowest in 20 years) than they did in 1938 (when wage rates were the highest). When the cost of hiring a man goes up, the railroads simply have to get along with fewer men. If costs per man are now shoved up, during the present temporary spurt of traffic, by the vacations-with-pay demand, the result will be that just that many more men will have to be furloughed when the war traffic ceases. How many railroad employees know these indisputable facts? And how can they make intelligent decisions regarding their own welfare while they remain in ignorance of such primary information?

FREIGHT DIESEL TO COAST: Our mechanical department editor, who accompanied the Santa Fe's Diesel-electric freight locomotive on its first revenue run to the Coast, has wired his account of the locomotive's performance—which appears on another page herein. The train consist varied between 2,000 and 3,000 tons and an average speed of 32.5 m. p. h. was made—without any effort to give the train special treatment as far as operating delays were concerned. The dynamic retarding brake seems to have given a good account of itself, by reducing by three-fourths the amount of air-braking needed to control the train on heavy grades.

LONGER LIFE FOR WOOD: Almost every aspect of the problem of wood preservation (all kinds of wood under all manner of service conditions) is dealt with in the report herein of the meeting last week of the Wood Preservers. Papers included cover such topics as experiments with marine piling along the Gulf, the lessons of the L. & N.'s long and fruitful history in timber treatment, and the revising of bridge specifications to reduce framing of treated timber.

WIDE LOADING VARIATIONS: Maintaining car supply requires a check on two varieties of traffic variation—one along sectional lines and the other on commodity lines. For instance, as an editorial herein points out, loadings for the first 4 weeks of 1941 were 7 per cent above the same 1940 period—but this 7 per cent is a composite figure. Comprised in it are reductions of 11 per cent and 7 per cent in coal and livestock and increases of other commodities, reaching as much as 33 per cent in the case of ore. Geographically, the 7 per cent increase is a composite of sectional loadings ranging from a 1 per cent decrease to an increase of over 11 per cent. It is these wide sectional and commodity ups and downs which test the skill of the railroads in meeting demands

for cars; a job the difficulty of which a simple composite figure, covering total loadings, fails to reveal.

ECONOMY IN A HOPPER: A covered hopper car which can be loaded with almost 4 more tons of cement than the usual car of its type is described and illustrated elsewhere herein. The new car, also, carries somewhat less dead weight than the standard vehicle.

OUR BUSY PRESIDENT: President Roosevelt has been so busy that, although the Transportation Act of 1940 is six months old, he has not found time to appoint the transportation board called for under that legislation. Too much occupied otherwise to appoint the board, the Chief Magistrate has nevertheless found time to take upon himself some of the jobs the Board is supposed to do. For instance, the President last week had a conference with Roads Bureau Chief MacDonald, in which he gave a sympathetic hearing to that official's scheme to build a vast system of superhighways at the cost of land-owners and anybody at all except highway users. The study of the nation's future policy with respect to transportation is a function entrusted by law to the Transportation Board—but this Administration is not one to pass on to others powers in the personal exercise of which it derives so much satisfaction.

DITCH WHITEWASH: The Department of Commerce has issued the first of a series of alleged research reports on the St. Lawrence waterway—the kind of research which starts with a conclusion and then tries to dig up supporting evidence. Here again the executive department is doing a job which properly belongs to the Transportation Board, the appointment of which the President continues to put off. Transportation chaos in this country can never end so long as policies are made separately for each agency, with little or no consideration that any other agency even exists. The St. Lawrence waterway, the "superhighway" proposals, the pipe line controversy, the "trade barriers" situation—all are parts of the nation's transportation problem as a whole; and none of them can be settled in the public interest by a little group of enthusiasts who have no interest in or knowledge of the problem in its entirety. That is why Congress provided for the Transportation Board.

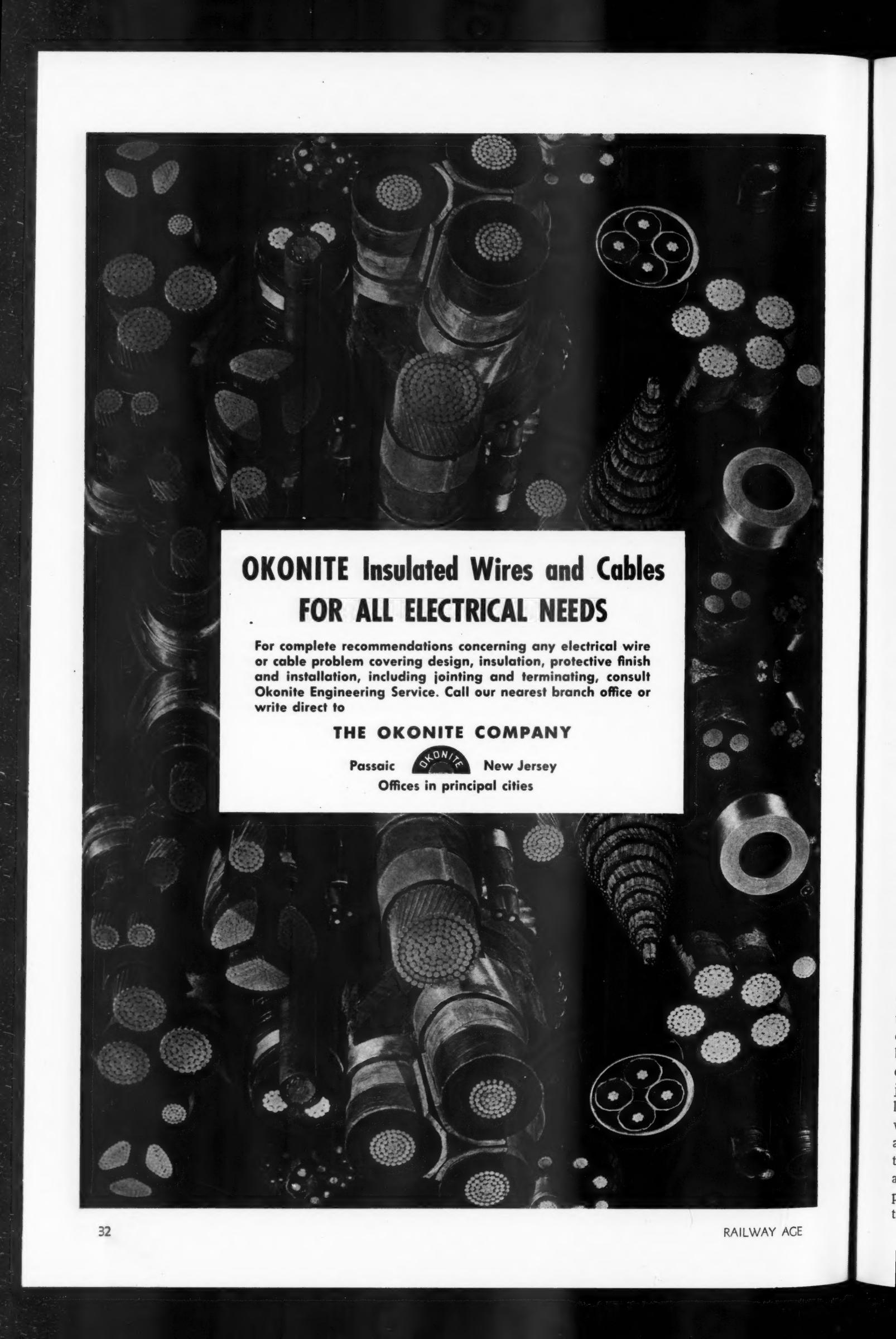
BIDDING FOR BONDS: The bankers who do the underwriting of railroad securities under non-competitive conditions, Senator Truman testified in effect before the Securities and Exchange Commission last week, give inadequate *quid pro quo* or none at all for the higher money costs which reliance upon them entails to the railroads. The Senator further asserted that the Senate sub-committee's records are full of evidence of abuses in connection with railroad issues placed non-competitively, but that there have been none on equipment trust certificates upon which competitive bidding is required.

SHAKES FINGER AT NYC: The railroads are periodically lectured about their unprogressiveness in adopting other and newer agencies of transportation. However, just let a railroad try to take the advice of the visiting firemen and see what a noose it sticks its neck into. In connection with its interest in forwarder operations the New York Central found itself affiliated with a carrier on the Great Lakes—and a news report herein itemizes the difficulties which have resulted therefrom. Coordination of transportation, in the abstract, is one of the most praiseworthy and socially-desirable activities in which a railroad can engage. But, in the concrete, this socially-useful activity is about as popular as measles at a picnic.

G. M. HARRISON, STRATEGIST: It is possible—easy even—to form an uncomplimentary opinion of George Harrison's prowess as an economic statesman and to entertain misgivings regarding the ultimate destination to which his policies may lead his followers, but it would be impossible, or at least unwise, to discount his skill as a political strategist. Just prior to announcing the strike vote on the vacations argument, Mr. Harrison called at the White House—thereby giving his project the aura of a presidential blessing, whether he actually got it or not. Moreover, Mr. Harrison said that he expected the case to go to an emergency board—which, of course, would be named by the President. A litigant who can thus impute to himself the sympathy of the official who would name the judges in his cause must receive credit for his acumen, whatever one may think of the justice or the wisdom of his program.

1940 ACCIDENTS: 66 passengers lost their lives in train accidents in 1940, according to the I. C. C.'s preliminary report, published in the news pages herein, as compared with 13 such fatalities in 1939. The total number of train accidents was 7,106—up 17 per cent over '39. Employee fatalities totaled 536—an increase of 7 per cent; and employee injuries added up to 17,890—up 5.5 per cent. December, 1940, was not such a good month accidentwise. Train accidents were up almost 26 per cent; total fatalities up an equivalent percentage.

A SOCIALIST CRUSADE: This paper was one of the first, if not the first, to call attention to the now widely-recognized effort of the British Socialist minority to capture the present war and make it a crusade in behalf of world Socialism: and to the evident encouragement which the British Socialists are receiving from certain unstable elements in our own country. The press in announcing the appointment of Governor Winant to the Ambassadorship at London has stressed his personal friendship with Ernest Bevin, prominent British Laborite politician with Socialist leanings; and some have even gone so far as to say that this appointment has as its purpose the strengthening of Bevin's power in British politics.



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Paid Vacations Now Plus Unpaid Permanent Vacations Later On?

There is nothing more obvious about the current increase in business, and the consequent improvement in railroad traffic and earnings, than the fact that the whole thing derives largely from American and foreign military expenditures, actual and prospective; and that nothing has yet been done to assure that the present "prosperity" will not collapse like a punctured balloon the instant rearmament halts. Anybody connected with the railroad industry who would be so foolish as to propose, or consent to, a *permanent* increase in railway expenses on the basis of such an ephemeral increase in revenue, is just storing up grief for the carriers and everybody connected with them—employees especially.

How Traffic Declined After the Last War

After the last war—railroad freight traffic (revenue ton-miles) declined 10 per cent from 1918 to 1919; and, after an upward spurt in 1920, to 24 per cent less in 1921 than in 1918. Railroad employment, as measured in man-hours, declined 12 per cent from 1918 to 1919, and to 27 per cent less in 1921 than in 1918. How little traffic the railroads could expect from the existing *normal* economic activity in this country is strikingly shown by the carloading figures—after 1937 they were persistently lower than in 1937 up to the outbreak of the war in Europe; and, even in 1940, were below 1937 and were losing ground prior to the downfall of France last summer. (Carloadings comparisons, by months, for the years 1937-40 were shown graphically in a chart published in our issue of January 4, page 35.)

The decline in railroad traffic which must be expected when American and foreign defense expenditures cease (failing intelligent action to forestall the decline—which action is nowhere yet in evidence) may be much more severe than that which followed the end of the last war. In those days the railroads enjoyed a large traffic in consumers' goods—l. c. l. and livestock, for instance. Such traffic is not subject to violent fluctuations—and it used to cushion the ups and downs of railroad business as a whole. But now these consumers' goods move very largely by truck; and the railroads have become much more heavily dependent for their earnings upon bulk and heavy industrial tonnage. This latter is precisely the traffic which

likely will show the principal decline when the defense effort comes to an end.

What Determines Railway Wages?

It has been repeatedly shown in these pages that total wages paid to railway employees bear a direct and almost-constant relationship to the volume of railway gross earnings. This is the most important fact there is, bearing on successful railway union policy—yet it is a fact to which present railway union leadership gives little or no heed. So, once again, we publish herewith the figures for every year from 1921 to 1939 inclusive (final figures for 1940 not being yet available). In this period of 19 years there have been

How Railway Wage Payments Are Determined
by Railway Earnings

	Railway Operating Revenue (Millions)	Total Wage Payments (Millions)	Per cent Wages of Revenues
1921	\$5,517	\$2,765	50
1922	5,559	2,640	47
1923	6,290	3,004	48
1924	5,921	2,826	48
1925	6,123	2,860	47
1926	6,382	2,946	46
1927	6,136	2,910	47
1928	6,112	2,827	46
1929	6,280	2,897	46
1930	5,281	2,551	48
1931	4,188	2,095	50
1932	3,127	1,513	48
1933	3,095	1,404	45
1934	3,272	1,519	46
1935	3,452	1,644	48
1936	4,053	1,849	46
1937	4,166	1,985	48
1938	3,565	1,746	49
1939	3,995	1,864	47

heretofore-unheard-of fluctuations in railway revenues—all the way between 6,382 million dollars in 1926 down to 3,095 millions in 1933 (a decline of 51.5 per cent)—and yet the proportion of total revenues paid out in wages has never in any year been greater than 50 per cent, nor less than 45 per cent. The average falls between 47 and 48 per cent, and the variation in all the 19 years has never been more than 2½ points on either side of this average. Moreover, in the one year when the percentage sunk as low as 45 per cent, it quickly recovered. Likewise when the percentage mounted to 50 per cent it was, in the following year, back again near the average.

No intelligent person can study these figures and

fail to conclude that gross railway earnings are the principal determinant of railway wage payments. It follows inevitably that union leadership, if competent and alert to the best interests of all railway employees, would devote more effort to the maintenance and increase of gross railway revenues than to any other objective—that being the principal if not the only means by which all-round employee interests can be protected and improved.

High Wage Rates Do Not Bring High Wages

In this 19-year period, average hourly earnings of railway employees went as low as 61 cents (in 1923) and as high as 75 cents (in 1938). And the total compensation of railroad employees was 3,004 million dollars in 1923, when average hourly wages were the lowest; and was only 1,746 million dollars in 1938 (or 42 per cent less) when the hourly rate was the highest. The all-important conclusion, from the standpoint of the self-interest of railway labor, which must be drawn from these figures is that the welfare of railroad employees *as a whole* was improved little, if at all, throughout all these 19 years by advances in hourly rates of pay; and that the dominant factor throughout the entire period in the well-being of employees as a whole has been the volume of gross revenues which the railroads either did or did not earn. Advances in wage rates have not been followed by larger earnings for labor; while wage rate reductions have been followed by larger employee earnings (notably in 1923).

How many railroad employees are acquainted with these facts? Not many (especially not many younger employees)—it is perfectly safe to conclude—because, if they were, it is certain that railway union policy would be concentrated to a far greater degree than it is upon conserving and increasing the volume of railway traffic and earnings. Advances in wage rates which are not accompanied by a proportionate rise in railroad gross earnings simply put more money in the pockets of senior railroad employees, at the expense of the jobs of younger men. It is a matter of common knowledge that, when wage rates once go up, it is all but impossible to bring them down again—although, the figures prove, wage reductions in times of business depression cause the retention of employees who would otherwise have to be furloughed. In Canada, in at least some industries, they are forestalling post-war unemployment, at least in part, by making war-time wages—above a basic minimum—fluctuate with the cost-of-living. Wage increases are thus viewed by the employees as more of a bonus than a permanent possession. Hence there will be less heartache if, after the war, lower prices bring lower living costs and wipe out the bonus. Meantime, the absence of a permanent level of high wages will reduce the number of men who will suffer unemployment at the end of the war.

The above observations are prompted by the demand the non-operating railway unions have made for paid vacations. As far as the railroads are concerned, the

granting of such a demand would simply be an increase in the hourly rate of wages. An increase of this character, as the wage and earnings figures show, would not improve the situation of railway labor *as a whole*; it would simply provide more favorable conditions for some employees at the expense of total railway employment. Right now, railway earnings and employment are tending upward and the proposed increase in wage rates (i. e., paid vacations) would probably not cause many employees to be discharged. The burden would be shifted primarily to employees now furloughed, who are in line to be called back to work, but who cannot be if this wage increase is granted.

Traffic Flexible, Wages Inflexible—So Jobs Are Hit

But the really serious part of this proposal is that this is a variety of wage increase which, once granted, would be almost impossible to remove—because of the fact that, to the individual employees, it will not look like a wage increase at all; and hence its removal would likely be strenuously resisted, no matter how grave the need. The present increase in railway traffic, earnings and employment has resulted largely, if not entirely, from actual or prospective expenditures by American and foreign governments for military supplies—an utterly insecure basis for a *permanent* increase in any type of expense. If this type of wage increase is granted and is not immediately removed (as, of course, it would not be) once military traffic ceases—then railroad employees of low seniority can probably expect the most drastic furloughing which they have ever suffered.

As a matter of fact, with the railroads in their present highly competitive position, every increase in unit costs of labor restrains the railways from competing for some traffic which they could otherwise continue to handle. If railroad labor in train and engine service, for instance, did not have rules or laws requiring two or three more men on branch-line trains than are actually needed to do the work, it is clear that many such lines which now must be abandoned could be continued in service—thus preserving not only train and engine service jobs, but clerical, station and maintenance employment as well. There are “marginal” trains, “marginal”

Reprints have been made of the editorial, “Our Dangers Abroad and at Home,” which was published in our February 1 issue and which discusses the relative dangers to this country of war abroad and the threat of the loss of our domestic freedom. These reprints may be had at a price of 30 cents for 10, \$1.25 for 50 or \$2 for 100, by addressing Railway Age, 30 Church Street, New York, N. Y.

stations, "marginal" branches and "marginal" traffic where the railroads are constantly just on the line of having to give up—if their costs are increased—or of holding on safely, if their costs can be lowered. Altogether, traffic associated with these "marginal" conditions is sufficient to make a big difference in the number of employees for whom the railroads can provide jobs. A wise and competent union leadership, alert to the true interests of its members, would not completely ignore this situation.

How Can the Railroads Keep Modern?

Another vital consideration which railway union policy has so far shied away from is the fact that it takes investment money to keep the railroads going; and the railroads have no source of such money except the people who are attracted by such safety of principal as

the railways are able to offer and such interest or dividends as they seem likely to earn. (Even the federal government lends money to the railroads only when its officials believe there is a fair chance of safety as to principal and interest). In contrast to the railroads—highway transportation and waterway transportation get billions of new capital each year from the pockets of reluctant taxpayers. These rival agencies of transportation are thus able to provide a constantly more modern and improved service, without having to worry about offering any attractions whatever to investors.

Largely because of the inroads of rivals which do not have to earn a return to attract new capital, the railroads (which with present and prospective earnings are able to command very little new capital, except for equipment) are carrying a constantly-decreasing proportion of the country's total traffic. This erosion of railroad traffic also carries with it an erosion of rail-

Time to Decide Who Regulates Rates

The Central States Motor Freight Bureau has modestly suggested, in effect, in its 82nd petition for modification of the orders in Ex Parte MC 21, that the Interstate Commerce Commission skip lightly over its own responsibilities with respect to minimum truck rates, and let the Bureau establish its own minima at the railroad level.

The petition does not indicate acquiescence by the Bureau in the provisions of the Transportation Act of 1940 with respect to rate-making for competing agencies of transportation—nor does the Bureau seem to have any misgivings as to the constitutionality of the kind of rate-making it proposes. As a matter of fact, many present rates of this Bureau which now have some semblance of minimum reasonableness (deriving from their temporary Commission approval under heretofore-unheard-of emergency power) do not meet the standards of minimum reasonableness established by the Commission in more recent individual cases.

The petitioners now propose that the Commission compound this existing dubious rate situation (i. e., indeterminate standards of minimum reasonableness) by giving them *carte blanche* authority to go practically as far as they like—seemingly without much concern for the letter and the spirit of the law requiring that the "inherent advantages" of each form of transport be preserved; and unmindful of the motor carriers' pledge to Congress to give the public the benefit of the economy and flexibility of highway transportation.

The petitioners go so far as to assert that the present rates, and the rates they propose to establish, are substantially lower than the rates they are informed the Commission will establish ultimately as lawful rates in proceedings now pending. In the meantime, they seek further authority to carry on the pleasant practice of picking and choosing their traffic—at the social cost of further unsound duplication of transportation facilities.

This costly (and, your observer believes, anti-social) duplication of facilities made possible by the present rule-of-thumb rate structure has already

caused a 10 per cent increase in freight rates on competitive traffic; and the petitioners apparently believe that some further increase in competitive freight rates is necessary to support their program of continuously multiplying the further duplication which they continue to advocate.

In one breath they seek the continuance of existing blanket minimum rate orders and the power to extend them; and in the next they assert that such orders prevent them from meeting their competition.

In addition to asserting that they are informed that the Commission will increase rates in pending proceedings, they also assert they are informed that the railroads expect to reduce their competitive rates drastically in the very near future. In view of the fact that the attorney for the petitioners was the man who (as a member of the Co-ordinator's staff) originally proposed, in substance, the very rate changes the railroads now rather tardily propose to make, it seems strange that petitioners do not reveal greater enthusiasm for these changes; and that, in effect, they are seeking authority to undermine a theory of rate-making which a leader among them once propounded *ex cathedra*.

The Commission, in its reorganization, set up machinery which is effectively dealing with competitive transportation rates—preventing the establishment of motor carrier rates at less than full allocated cost, which petitioners assert is required by the Transportation Act of 1940. (For example, the decision in I & S M-1042).

There is a simple procedure in keeping with the law, which would enable the petitioners to enjoy the freedom they assert in their petition to be necessary. Let the Commission vacate all of its orders in these *ex parte* proceedings and strike them from the docket. Then allow its new Division, which was given exclusive power by Congress to consider such questions, to proceed soundly, as it has been doing effectively in individual cases, to prevent the further establishment of rates in this area that do not meet sound tests of minimum reasonableness.

road jobs. Railway union leadership has given evidence that it appreciates this fact—but it has so far limited its remedial action to attempts to impose fair and equal burdens of regulation and self-support on railway competitors. There has been little or no recognition that an increase in the obligation of rival agencies to pay their own way (even if such assumption of obligation were assured, which it is not) would not eliminate them from competition. In the old days, burdensome wages and other restrictions could be forced upon the railroads—and they could be passed along to their customers, who could either pay them or not ship their goods at all. Burdensome wages and working conditions could then be made to "stick." Not so now. The customers just take their goods around the corner to a truck line or water line; and a few more railroad employees go to eating up their savings.

More Severe Highway Competition After the War?

On the very next day after George Harrison went to the White House and, presumably, secured the President's blessing of his project for enforcing vacations with pay on the railroads, the Chief Executive had a conference with T. H. MacDonald, head of the Bureau of Public Roads—the project under discussion being a vast system of super-highways to be undertaken by the government immediately after the defense effort ceases. Thus the threat is, when the war effort comes to an end, that there will be more competition by the government against the railroads and the jobs of their employees, rather than less. The vacations-with-pay proposal, at that time, would be a further burden working against the maintenance of railroad employment at a time when, at the very best, keeping men at work promises to be a difficult business.

The choice Mr. Harrison has made for his followers thus appears to be: Vacations with pay now, to be paid for later on by permanent vacations without pay.

Railroad Traffic Variations

In anticipating and providing for the nation's demands for transportation service, the railways have met successfully the twin problems of traffic variation along commodity lines and of similar variation along sectional lines. While carloadings in the first four weeks of 1941 were 7 per cent greater than a year ago, this composite figure includes changes in commodity loadings ranging from a reduction of 10.8 per cent to an increase of 33 per cent, and changes in sectional carloadings ranging from a reduction of 1.2 per cent to an increase of 11.4 per cent.

As compared with the same period last year, carloadings in the first four weeks of 1941 showed reductions in two commodity groups, coal and livestock, these reductions amounting respectively, to 10.8 per cent and

to 7.1 per cent. All other commodity groups showed increases, these increases amounting to 2.9 per cent for merchandise carloadings, 5 per cent for grain and grain products, 6.5 per cent for coke, 19.1 per cent for miscellaneous freight, 26.5 per cent for forest products, and 33 per cent for ore carloadings.

On a sectional basis, a reduction in carloadings occurred in one area—the Pocahontas region—this reduction amounting to 1.2 per cent. Increases were shown elsewhere throughout the country, these increases amounting to 3.4 per cent in the Northwest, to 4.8 per cent in the Central West, to 5.3 per cent in the Eastern region, to 10.6 per cent in the Southwest, to 11.3 per cent in the South, and to 11.4 per cent in the Allegheny region.

The record of the railways, in their handling of such wide commodity and sectional traffic variations, is an outstanding one.

Indexes to Volume 109

The indexes to the latest volume of the *Railway Age*, July to December, 1940, are now ready for distribution and copies may be had by those subscribers desiring them. Requests should be addressed to the Circulation Department, *Railway Age*, 30 Church Street, New York. Subscribers who have in previous years made application for the index need not apply again; they will continue to receive it as long as they continue to subscribe.

* * * *

"Ordinary" Government Spending Should be Reduced

With the defense program demanding the utmost use of our financial and economic resources, the country cannot afford to support programs which were luxurious even before the defense emergency was recognized. Congress and the administration must now have the courage to reduce every expenditure not required for defense or essential government.

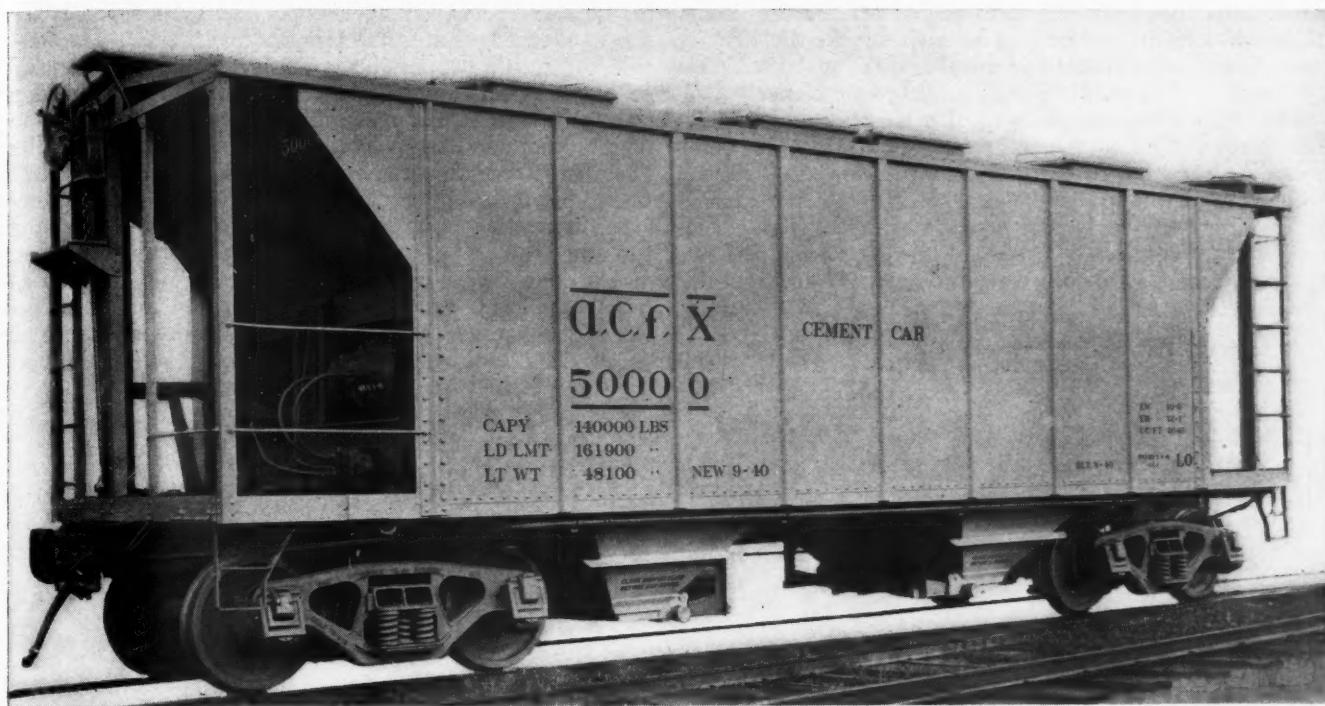
The magnitude of the defense appropriations themselves calls for extraordinarily efficient management, and Congress should be on guard against the masquerading of pet projects under the defense label.

The support of our defense establishment will require sacrifices beyond the present realization of most taxpayers. The burden can be met only if defense costs are offset to the greatest possible degree by economies elsewhere in the budget.

Continuation of subsidy programs in the face of huge defense expenditures would intensify the upward pressure on prices and impose an unjustified burden on persons with fixed or lagging incomes. The principal task of economic leadership in the near future is the reverse of pump-priming. The coming "prosperity" must be kept in hand, not only to prevent disastrous confusion in defense production but to facilitate the transfer to peace-time activity without large federal deficits in the future.

Public works and work relief projects compete directly with defense production in the markets for construction labor and materials. Stimulation of consumption competes indirectly for productive resources and increases the cost of defense materials to the government.

*From a Pamphlet "Indefensible Spending,"
Published by National Economy League, 280 Madison Ave., N. Y.*



Covered Hopper Car of Increased Capacity

New design by American Car and Foundry Company has nominal capacity of 70 tons and 2,040 cu. ft. with light weight of 48,100 lb.

THE increasing use of covered hopper cars for the transportation of bulk commodities such as cement, clay, lime, powdered coal, dolomite, glassed sand, etc., influenced the American Car and Foundry Company to make an exhaustive study of covered hopper-car designs with a view to producing a car having greater earning capacity than existing designs. A demonstrator car No. acfx No. 50,000, has been built which has a light weight of 48,100 lb. and a nominal capacity of 70 tons. The body of the car weighs 29,640 lb. and the trucks 18,460 lb. By comparison with this car the A. A. R. standard design of 70-ton hopper car weighs 30,640 lb. for the body and 18,250 lb. for the trucks, or a total of 48,890 lb. The cubic capacity of this covered hopper car, when loaded to the junction of the roof sheet with the side plate, is 2,040 cu. ft. If loaded only to the top of the horizontal web of the side plate, the capacity is 1,981 cu. ft.

Cement, as it is blown into the car at the loading position, weighs about 80 lb. per cu. ft. because of the air trapped in it. During the loading operation, a portion of this air will escape as the cement settles and before the car has travelled very far a sufficient portion of this air will have escaped and the cement settled so that it has a density of from 92 to 96 lb. per cu. ft. This car has sufficient cubic capacity to permit loading to the full revenue load limit of 161,900 lb., or nearly 81 tons. As com-

pared with the largest covered hopper car previously built by the American Car and Foundry Company for cement transportation, this car has an increased capacity of 82 cu. ft. when figured to the junction of the roof sheet and the side plate and 89 cu. ft. to the top of the horizontal web of the side plate. On the other hand, its light weight is 3,500 lb. less. The revenue load limit is thereby increased by a like amount or about 2.2 per cent. Compared with the previous car, the ratio of light weight to revenue load is changed from 3.07 to 3.36 and the percentage of revenue load to rail load limit from 75.5 to 77.1 per cent.

Structural Features

The center sill consists of A. A. R. rolled-steel Z-sections weighing 36.21 lb. per ft. with the top flanges welded along the center line of the car. The end sills consist of two 6-in. by 3½-in. angles extending from side sill to side sill and the side sills consist of two 6-in. by 3½-in. angles extending from end sill to end sill. The strikers are drop-forged and separate drop-forged draft lugs are welded to the center sill. The four diagonal braces are 5-in. by 3½-in. angles attached to the side and end sills and to the bolsters and center sills by means of gussets. The body bolsters are 24-in. by 9-in. car builder's sections extending from side sill to side sill across the top of the

center sills to which they are welded and further connected by $\frac{3}{8}$ -in. gussets. The web of the bolster is riveted to the side stakes and the side sheet at the bolsters by means of $3\frac{1}{2}$ -in. by $3\frac{1}{2}$ -in. angle connections.

The slope-sheet supports at the bolsters are $\frac{5}{16}$ -in. bent plate extending the full width of the car and connected at the side of the car to the connection angles, previously mentioned, and near the center of the car by means of gussets to $4\frac{1}{8}$ -in. Z-supports. The slope-sheet supports are connected to the bolsters by means of 5-in. by $3\frac{1}{2}$ -in. angles which are separated by a 6-in. by 4-in.

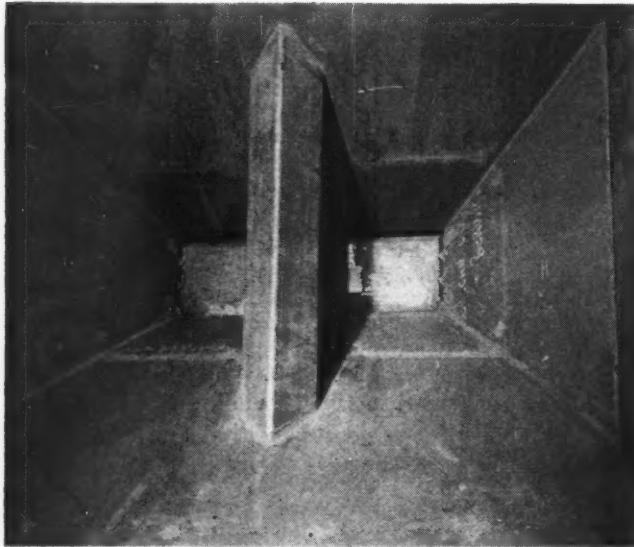
Principal Weights and Dimensions of A. C. F. 70-Ton Covered Hopper Cars

Length over strikers, ft.-in.	35- 3
Length inside, ft.-in.	29- 3
Length, center to center of trucks, ft.-in.	25- 3
Width over side plates, ft.-in.	10- 5
Width inside, ft.-in.	10- 0
Height, over running boards, ft.-in.	12-10 $\frac{1}{4}$
Height to top of side plates, ft.-in.	11-10
Capacity (top of side plate horizontal web) cu. ft.	1,981
Capacity (junction of roof with side plate) cu. ft.	2,040
Light weight, lb.	48,100
Load limit, lb.	161,900
Ratio light weight to revenue load, per cent	3.36
Ratio revenue load to gross weight, per cent	77.1
Hopper centers, ft.-in.	11.9

angle and extend longitudinally to connect the end floor-sheet stiffeners. The body side bearings are of hardened steel and the side-bearing members consist of an 8-in. I-beam welded to the bolster and the center sill flanges by means of angles. The body center plates are drop forged.

The slope sheets are $\frac{1}{4}$ -in. plate extending from side to side and from carline angle to a point slightly below the sills where they are welded to the slope-sheet extension which continues to the discharge gates. The slope sheets are welded to the side sheets, outside hopper sheets, discharge gates, inside hopper sheets and longitudinal hoods.

The center partition is $\frac{1}{4}$ -in. plate extending from side sheet to side sheet and from the underside of the roof at



The Welded Construction of the Car Provides Smooth Interior Surfaces

the center carline to a point approximately 15 in. below the joint of the cross-ridge floor slope sheets. The cross ridge slope sheets are $\frac{1}{4}$ -in. plate extending from side to side. They are in two sections welded together at a point slightly below the center sill. The cross-ridge sheets are welded to the partition sheet at the top as well as

to the side sheets, outside hopper sheets, inside hopper sheets, discharge gates and longitudinal hoods. The outside and inside hopper sheets for the four hoppers are of $\frac{1}{4}$ -in. plate with welded connections to the side and slope sheets, longitudinal hoods and discharge gates. The longitudinal hoods are $\frac{1}{4}$ -in. plate extending between the floor slope sheets over the center sills and are welded at the connections. The discharge gates are of the sliding type, manually operated. They move lengthwise of the car and are arranged to permit full or partial openings.

The side sheets on these cars are No. 7 gage open-hearth steel butt welded to each other and welded to the slope and hopper sheets, as previously described. The



End Construction of the Car and Arrangement of the Roof and Hatches

side plates are of 3-in. Z-bar extending the full length of the car with $1\frac{3}{4}$ -in. by $1\frac{3}{4}$ -in. sub side-plate angles. The intermediate side stakes are $\frac{1}{4}$ -in. pressed plate with $\frac{3}{8}$ -in. pressed stakes at the bolsters, extending from the side sills to the side plates. All of the side stakes are welded to the side sheets. The corner posts are $3\frac{1}{2}$ -in. by $3\frac{1}{2}$ -in. angles and the end posts are 3-in. by 3-in. angles.

The roof-construction consists of 11 carlines of 3-in. by 3-in. angles formed to suit the contour of the roof sheets which are of No. 11 U. S. gage steel riveted to the carlines. There are eight hatches, four on each side, of $\frac{3}{16}$ -in. open-hearth steel with longitudinally sliding covers of No. 11 U. S. gage steel. The locking arrangement for the hatch covers is arranged so that one man standing on the running board of the car can lock or unlock all eight hatch doors by throwing one lever. After the doors are unlocked, it is necessary only to raise the front end of the door slightly so that a lip on the door will pass over the top of the hatch frame and the door may be slid back to the full open position.

Upon the completion of acfx No. 50,000, the car was subjected to a series of impact tests by loading to practically full rail load limit with wet sand. The total weight on the rail was 209,800 lb. The test car was used as a striking car and the car which was struck was a heavy steel car loaded to full rail limit of 209,820 lb. Eight impact tests were made at speeds of from 5½ to 12 m. p. h. The test results evidenced the ability of the car structure to withstand the stresses imposed.

Trucks and Brake Equipment

These cars are carried on four-wheel trucks with cast-steel double-truss type side frames having boxes cast integral. The bolsters are cast steel with integral center plates. The trucks are equipped with A. A. R. 33-in. diameter chilled wheels and 6-in. by 11-in. A. A. R. standard axles. The truck wheelbase is 5 in. by 8 in. The brake equipment is the latest AB schedule with 10-in. brake cylinders.

Kentucky Employees Alert to Loss of Traffic

ORGANIZED railway employees in Kentucky are unusually alert to competitive developments which are filching away (or threatening to) railway traffic and jobs. All such developments are watched closely by the representatives of the organizations in the state, who meet from time to time to take appropriate action to resist these inroads. At one such meeting, held recently in Louisville, the employee representatives discussed current misleading propaganda by the trucking interests to break down state limitations on truck sizes and weight, the St. Lawrence waterway and the proposed canalization of the Big Sandy river. Statements of employee opinion on these questions were issued to the press of the state.

On the St. Lawrence project the employees' press statement said:

"Like so many others who think the magic words 'national defense' offer a valid excuse for doing things which could not possibly be justified in any other way, proponents of the St. Lawrence project are urging that it be undertaken as a 'defense' measure. Nothing could be farther from the truth." Speakers on the subject included L. E. Whitler, Louisville, chairman, State Legislative Board, Brotherhood of Locomotive Firemen and Enginemen; N. J. Gallagher, Louisville, State Legislative Representative, Brotherhood of Railroad Trainmen; J. D. Kinsella, Lexington, State Legislative Representative, Order of Railway Conductors; and J. N. Hatcher, Corbin, Brotherhood of Locomotive Engineers. The speakers made it clear that "this waterway would be in direct competition with many railroad lines already furnishing adequate, efficient and economical transportation, but which could not compete with ships operating free of charge over a publicly-financed, tax-free waterway."

On the practices of truckers, Mr. Gallagher said: "By misrepresenting the effect of certain state laws, or by coloring and even falsifying instances in which their own attempts to evade those laws have failed, the truckers have persuaded persons holding official positions in Washington to make speeches, and have induced reputable newspapers to publish articles, conveying entirely false ideas of the purpose and effect of legitimate statutes enacted for the protection of the public."

"Typical of truck propaganda which has fooled the

public and some officials from Washington," said Mr. Whitler, "is the incident in which a truck carrying a transformer from Chicago to Old Hickory, Tenn., was allegedly held up and fined at West Point, Ky.

"This incident," he said, "has been repeated in public statements by truck propagandists in Washington, in California, and in the last day or two by truck officials here in Kentucky. We made a very careful investigation of the facts, even securing an affidavit from the patrolman who stopped the truck. The facts are as follows:

"In June, 1933, the municipal power plant at Old Hickory was disabled by lightning, and a truck carrying a new transformer was dispatched from Chicago. The truck violated the Kentucky law both as to weight and length and accordingly was stopped by a Highway Patrolman at West Point. The operator of the truck could easily have secured a special permit from the state but chose to ignore the law, and gave his driver an informal and very indefinite letter asking for the privilege of violating the Kentucky law.

"Up to that point the truckers' story is in accord with the facts. But they go on to claim the truck was delayed 24 hours and fined \$100; whereas in reality it was delayed not over 30 minutes and fined exactly nothing!"

Canalization of the Big Sandy river from Catlettsburg to Pikeville, the employees contend, will not only throw hundreds of railroad workers out of employment, but may cost the counties of Lawrence, Johnson, Floyd, Pike and Magoffin as much as \$400,000 a year in general and school tax revenues.

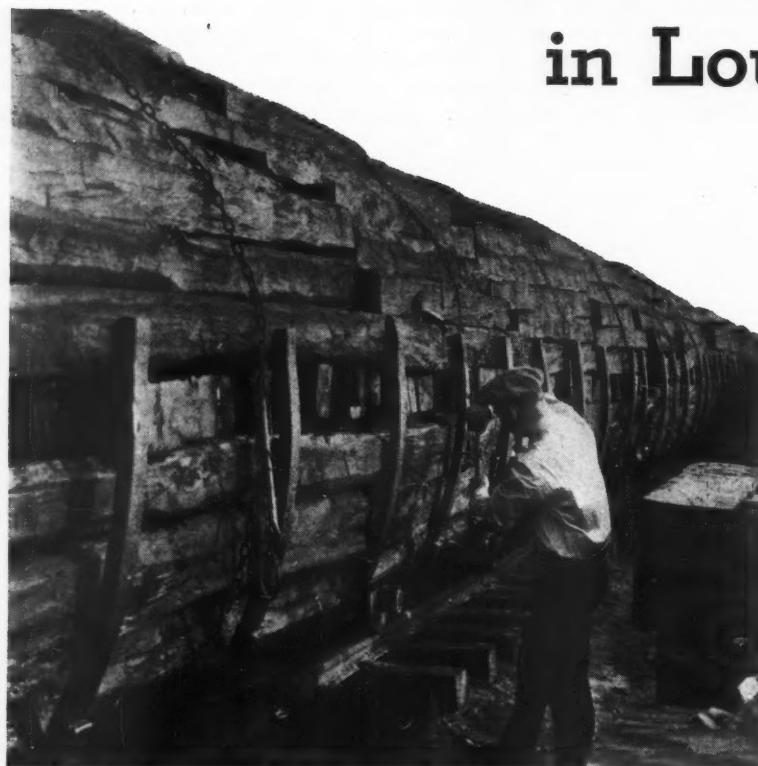
"The proposal to build locks and dams on the Big Sandy is simply another attempt to use public funds, contributed by the people as a whole, to duplicate existing adequate transportation facilities, at enormous total cost so that a few favored interests can obtain cheaper freight rates at the taxpayers' expense," said Mr. Kinsella.

"The proposed Big Sandy waterway, for its entire length, would exactly parallel the Big Sandy division of the Chesapeake & Ohio, built and equipped by private enterprise at enormous expense to furnish the people of the Big Sandy valley with efficient, modern transportation. That division exists largely to haul coal mined in the Big Sandy valley. It furnishes employment to thousands of men in the five counties through which it passes, and pays those counties and their cities some \$400,000 a year in taxes for schools, roads and general purposes.

"If coal traffic is diverted to a government-built, government-maintained and government-operated waterway remaining traffic will probably not be sufficient to justify continued operation of the railroad, and may compel application for its complete abandonment, with dire results to its employees and the beneficiaries of its tax payments. Even if it should continue to run, the number of its employees, and its annual tax payments, would inevitably be sharply curtailed."

REGULAR TRAIN SERVICE between Greece and Yugoslavia has been suspended ever since the beginning of the war between Greece and Italy on October 28, according to the United States Bureau of Foreign & Domestic Commerce. No freight at all has passed between the two countries and very few passengers have crossed the frontier. Those who have done so have been forced to traverse on foot a distance of approximately one-half mile between the station of Aidomeni on the Greek frontier and Djevdjelija, Yugoslavia. At irregular intervals a special train carrying only mail is operated between the two countries, but no passengers are carried. It is reported that negotiations are pending for the operation of one local train at least every two days to carry mail until normal communication can be established.

Wood Preservers Meet in Louisville, Ky.



Largely attended convention develops much of interest to railroad users of timber

NEARLY 400 men interested in railway and other uses of treated timber gathered in the thirty-seventh annual convention of the American Wood-Preservers' Association at Louisville, Ky., on February 4-6. The meeting was one of the most largely attended in the history of the organization and the timeliness of many of the topics incorporated in the program contributed to active interest in all sessions. Ralph E. Meyers, vice-president of the International Creosoting & Construction Company, Galveston, Tex., presided in his capacity as president.

Of special interest to the railways, in addition to reports on improved treating practices and on service records of treated timber, were the opening address by J. B. Hill, president of the Louisville & Nashville, and the response by Elmer T. Howson, western editor of the *Railway Age*, and addresses at the Users Day session on Wednesday morning on Thirty-One Years' Experience with Treated Ties on the Lehigh Valley, by A. N. Williams, president of that railway; on The Uses of Treated Timber and Ties by the Louisville & Nashville, by L. L. Adams, engineer maintenance of way of that railway; and on Revising the Burlington Railroad's Bridge Standards to Reduce the Preframing of Creosoted Timber, by G. A. Haggander, assistant chief engineer of the Chicago, Burlington & Quincy.

In welcoming the convention to Louisville, Mr. Hill stressed the uncertainties of the days through which the railroads, in common with other industries, are passing and emphasized the necessity for clear thinking and courage in meeting these issues. In response, Mr. Howson pointed to the pioneer work done by the L. & N. in developing the possibilities of treated timber and the large use that it has made of this material through the 70 years since it built its first plant at West Pascagoula, Miss. Abstracts of the addresses of Messrs. Adams and Haggander and of those reports and papers that are of

special interest to railway men follow. Mr. Williams' paper will appear in a later issue.

At the concluding session, W. R. Goodwin, engineer wood preservation, Soo Line, was elected president; W. P. Conyers, Jr., vice-president and treasurer of the Taylor-Colquitt Company, Spartanburg, N. C., was elevated to first vice-president; R. H. Colley, engineer, Bell Telephone Laboratories, Inc., New York, was elected second vice-president; and H. L. Dawson was re-elected treasurer. New directors include J. H. Bremicker of the Pennsylvania, Philadelphia, Pa.; J. D. Burnes, engineer, Page & Hill Company, Minneapolis, Minn.; and R. B. Maine, assistant general manager, Gulf States Creosoting Company, Hattiesburg, Miss. Minneapolis was selected as the 1942 convention city.

The report of H. L. Dawson, secretary-treasurer, showed a total membership of 1,717, an increase during the year of 25.

More To Be Done

In reviewing the work of the Association during the last year, President Ralph E. Meyers stressed the importance of continued interest in research. "In the field of technical progress," he said, "our program includes a paper on the kiln drying of southern pine poles, a method of conditioning poles that is brought before us for the first time, and that is now just beginning to have commercial possibilities. Two papers will be presented describing certain of the newer salts and what they are claimed to do in wood preservation. The chlorinated phenols are bidding for more study and more attention.

"The increased knowledge that we have of the penetration of preservatives into wood, the value of this penetration, the better means of obtaining and measuring it, and the recent finding of an excellent method for determining the heartwood-sapwood line have all served to equip us

for further development in certain needed fields of penetration. We need to know more about the penetration of the preservative into the heart face of sawn stock, how to obtain it, and evaluate it; how to know what is needed for proper service. In an industry that inherently must be conservative in its acceptance of the new, our Association on the other hand cannot afford to be so conservative that the new or proprietary idea cannot get a hearing. We must recognize that research is being done, and we need be alert that it goes through, and not around, our plants. The wood that we treat this year must be better treated than that treated the year before, or the year before that.

"And while we review the good, I say to those who make, and to those who buy and use, that it is to the interest of all of us to guard against low-price as the prime factor in treated wood. In the desire for volume, or the drive for business, or the keenness of the buyer, literally nothing is gained by any of the parties concerned if the purchase is made at less than cost. I suppose that as long as there has been trade between men there always has been the problem that 'Nothing was ever made that some one else could not make worse and sell for less.' A principle that we should never desert is that 'the best possible preserved wood service *cannot* be obtained at the cheapest possible price.'"

Specifications

As heretofore, the association devoted a large part of its attention during the year to the revision and perfection of its specifications. The Committee on Inspection, of which H. F. Round (Penna.) was chairman, presented a complete revision of the association's Standards for the Purchase and Preservation of Treatable Timber. Also, the Committee on Pressure Treatment of Poles, J. D. MacLean (Forest Products Laboratory), chairman, presented specifications for the preservative treatment of jack pine, red pine and lodgepole pine poles by pressure processes. The Committee on the Pressure Treatment of Oak Ties and Lumber reported progress in the preparation of specifications for the treatment of this timber and suggested the use of specifications presented in 1939, for the treatment of upland oak until the committee is able to make further progress in the completion of its full specifications. The Committee on Diversified Uses of Treated Wood, of which A. R. Joyce (Wood Preserving Corporation) was chairman, presented a revision of the association's specifications for the use of pressure-treated lumber in protecting buildings against decay and subterranean termites.

Another activity of this association is the compilation and presentation of service records of treated timber. The Committee on Tie Service Records, A. J. Loom (N. P.), chairman, brought up to date the records of crosstie renewals of 27 railways, together with reports of special test tracks on five railways. Similarly, the Committee on Pole Service Records presented data on some 19 installations of poles, including those on the Florida East Coast, the Louisville & Nashville and the New York Central. The Committee on Marine Piling Service Records, of which A. S. Daniels (S. P.) was chairman, presented a detailed report of the condition of 13 structures of the Southern Pacific in San Francisco Harbor and of test piling installed by the Seaboard Air Line at South Boca Grande, Fla.

Special interest was shown in a report presented by J. G. Segelken, Bell Telephone Laboratories, on experiments made on the kiln drying of Southern pine poles prior to treatment, to determine the behavior of the poles during kiln drying, and the economies of this procedure. Discussion from the floor developed that several com-

panies are working on this procedure, as a means of increasing the effectiveness of treatment and the capacity of their treating plants.

In an extended paper presented by Henry Schmitz, professor of forestry at the University of Minnesota, Stanley J. Buckman, head of the research department of the American Creosoting Company, and Hermann von Schrenk, consulting timber engineer, the first of a series of progress reports, designed to extend over a period of 30 years, presenting the results of a study of the comparative merits of a 60-40 creosote-coal tar solution and of coal tar were presented. These studies are being made on red oak crossties that had been seasoned for 13 months and were adzed and bored before treatment. About two months after treatment, these ties were installed in a heavy traffic main track of the Chesapeake & Ohio at Russell, Ky. After three years in track, a limited number of these ties were removed for examination and study and the results of this limited period of service were presented in this report, in which the authors drew the conclusion that although the toxicity of the mixture solution was greater than that of the coal tar originally, the toxicities of the two were approximately equal after this three years' service in track.

The Preservatives committee, of which J. S. Giddings (A. T. & S. F.) was chairman, presented a tentative specification for creosote-coal tar solutions of 70-30, 60-40 and 50-50 proportions, to supplement the specification for an 80-20 solution already adopted and thereby meet the varying practices in vogue on different railways. This committee also presented service records compiled by the Southern Pacific on piling treated by low-residue and by high-residue creosote, which showed an average service life of 23.9 years for piles that have failed to date, treated with low residue creosote and an average service life of 16.0 years for corresponding piles treated with high-residue creosote.

A committee headed by J. G. Segelken, Bell Telephone Laboratories, New York, described tests that are being made to determine means for painting creosoted wood, which, while not yet conclusive, had shown no paint as having yet proved satisfactory on all applications reported, although the use of more than the customary 2 lb. of aluminum pigment per gallon of vehicle may be justified.

L. K. Andrews, F. W. Gottschalk and J. P. Johnson, Jr. of the American Lumber & Treating Company, presented service records of more than 21,000,000 ft. b. m. of timber treated with Wolman salts, 62 per cent of which has been in use for 10 to 15 years in various types of structures, including railway bridges and wharves. Of this material, it was stated that only 0.2 per cent had been removed because of decay and 1.2 per cent because of mechanical causes. It was stated further that 208,000,000 ft. b. m. of Wolmanized lumber has been installed during the 10 years from 1930 to 1939, inclusive, including nearly 31,000,000 ft. b. m. used in 1939.

Lumber for Car Construction

The Committee on Treated Wood for Car Lumber, of which H. R. Condon, vice-president of the Wood Preserving Corporation, was chairman, presented a report on numerous installations of treated wood in freight cars, of which the following is an abstract.

The St. Louis-San Francisco installed more than 3,300,000 ft. b. m. of treated car lumber in 1937-1939, as listed below:

	Ft. b. m.	1937	1938	1939
Creosoted decking	726,000	586,000	785,000	
ZMA decking	61,000	69,000	67,000	
Creosoted nailng sills	62,000	48,000	78,000	

Creosoted coal-car sides	170,000	142,000	267,000
ZMA running boards	84,000	76,000	93,000

The creosoted decking was used in flat cars and flat-bottom coal cars and the ZMA treated decking in stock cars. Creosoted oak nailing stringers or sills and shims were used under the treated decking. On house or box cars, ZMA treated running boards were used on creosoted wood or on metal saddles. Present practice is to use metal saddles on new or rebuilt cars.

The Louisville & Nashville treated several hundred thousand feet of creosoted black gum to a net retention of 7 lb. of distillate creosote per cu. ft. of wood during 1939 for use for flat car decking. Salt-treated southern yellow-pine running boards and creosoted black-gum saddles are now also being used on house cars.

The Chicago, Milwaukee, St. Paul & Pacific purchased stock cars in 1928 and 1929 in which more than 1,000,000 ft. b. m. of creosoted lumber was used for decking. The lumber was Douglas fir, framed and incised before treatment, in accordance with the Milwaukee's specifications.

The Missouri-Kansas-Texas constructed 500 steel flat-bottom gondola cars at its Denison, Tex., shops in 1937, in which creosoted lumber No. 1 common dense southern yellow pine shiplap, $2\frac{3}{4}$ in. by $5\frac{1}{4}$ in., treated to a net retention of 6 lb. of creosote per cu. ft., was used for the floors. Later in the same year the M-K-T constructed 500 stock cars in which the following treated lumber was used, all of which was No. 1 common dense southern yellow pine treated by the Rueping process with a net retention of 6 lb. of distillate creosote per cu. ft. of wood:

Flooring, $1\frac{3}{4}$ in. by $5\frac{1}{4}$ in., S1S2E.
 Roofing, $1\frac{9}{16}$ in. by $5\frac{1}{4}$ in., T&G.
 Running boards, $1\frac{1}{8}$ in. by 7 in.
 Running board saddles, $2\frac{9}{16}$ in. by 3 in. by 22 in.

The Denver & Rio Grande Western installed creosoted decking in 100 new stock cars, constructed in its Denver shops in 1940. The decking was close flat-grain Douglas fir, center matched and finished to $1\frac{3}{4}$ in. by $5\frac{1}{16}$ in., pressure creosoted by the Rueping process to a net retention of 5 lb. Grade 1 distillate creosote per cubic foot of wood. A steam bath was used after treatment and the treated lumber was consequently free of bleeding when installed. In 1939, the Chesapeake & Ohio began the use of salt-treated running boards.

In 1925, the Cleveland, Cincinnati, Chicago & St. Louis used creosoted lumber for floors, stringers, roof boards and posts in 10 single-deck stock cars rebuilt at the Beach Grove, Ind., shops. In 1933, some of these cars were inspected and found in first class condition. While no detailed information is available, there is no record of replacement of any of the creosoted lumber. In 1933, creosoted lumber was used in other stock cars constructed at the Toledo shops of this road. Records of the service of the treated lumber in those cars is not yet available.

In 1925, the Illinois Central installed pressure-creosoted decking and stringers in 200 stock cars. In 1939, it was reported that the untreated roofing, slats and posts in a number of these cars had been replaced for the third time but that no creosoted decking had been removed because of failure from decay.

In 1929 and 1930, the Alton rebuilt about 150 stock cars in which approximately 150,000 ft. b. m. of creosoted lumber was used for decking. The lumber was air-dried, shortleaf yellow pine, No. 1 common dense, S1S2E to $1\frac{3}{4}$ in. by $5\frac{3}{4}$ in. and $7\frac{3}{4}$ in., treated by the Rueping process with AWPA distillate creosote to a net retention averaging approximately 8 lb. per cu. ft. of wood. Complete sapwood penetration was reported. Surfaces were practically free of bleeding when the decking was installed. About the same time other stock cars were decked with untreated pine and untreated Douglas fir.

Inspection of some of the Alton cars in November,

1940, after about 10 years' service shows that in all cases the creosoted decks are in excellent condition, while the untreated-pine decks in some cases were partially renewed within the 10-year period because of decay and the portions of the untreated decks which were not renewed are now in badly decayed condition and in general require complete renewal. One car inspected was constructed with untreated Douglas fir decking which has partially decayed and is rather extensively checked and split. There is no evidence of decay in any of the creosoted decks and the general condition, insofar as splitting, warping and wear is concerned, was much better than that of untreated material. Apparently the moisture-repellent properties of the creosote helped to maintain these decks in a smoother condition, preventing the twisting and splitting of the plank.

Marine Piling Experiments On the Gulf Coast

By J. D. MacLean*

In 1911 the Forest Products Laboratory started experiments on the Gulf coast to study the relative effectiveness of different kinds of preservatives in protecting piling against marine borers. One group of specimens was installed at Gulfport, Miss., in co-operation with the Gulf and Ship Island, and another was installed at Pensacola, Fla., in co-operation with the Louisville and Nashville. All pieces are bolted to steel frames and suspended in the water under the wharves of the co-operating companies. The specimens at Gulfport have been exposed to shipworm attack only, while the specimens at Pensacola have been attacked by both limnoria and shipworms and these borers are very active at that place. Martesia have also attacked some of the specimens at Pensacola, but their attack has been somewhat sporadic and relatively unimportant.

The preservatives under test at Gulfport include coal-tar creosote, various fractions of coal-tar creosote, water-gas-tar creosotes, coal tar creosote containing ferric chloride; copperized creosote; coal-tar creosote containing different proportions of naphthalene; crude oil and zinc chloride; copperized crude oil; wood tar; timber asphalt, and spiritine, a product of the distillation of southern pine. Those at Pensacola include six creosotes containing high proportions of tar acids or tar bases.

The results of these experiments show that when the preservatives had properties that offered distinct resistance to borer attack, their effectiveness became more pronounced as the absorption was increased. These experiments show also that oils with high proportions of light distillates or tar acids are very definitely less effective than the oils with higher boiling constituents. Results obtained with creosote mixtures containing high percentages of naphthalene indicate that resistance to borer attack decreased with increase in the proportion of naphthalene. No particular benefit appeared to be gained by fortifying creosote with chemicals such as copper salts, organic or inorganic arsenic compounds, carbazole, dinitronaphthalene, dinitrochlorobenzene, and ferric chloride.

A considerable number of preservative salts, both soluble and insoluble have been used in these experiments but none has shown promise of offering more than slight resistance to borer attack.

A comparison of the ability of different borers to attack treated wood shows that when the wood is exposed to both shipworm and limnoria attack, the limnoria will

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often enter heavily creosoted wood while it is still effectively protected against the shipworm. Early limnoria attack has also been noted when preservatives other than coal tar creosote have been used. Martesia can also enter heavily treated wood before it is attacked by the shipworm. Only a few scattered martesia, however, were found in the treated softwoods and damage caused by this borer was very slight except in the untreated green-heart specimens which were destroyed by them. Attack by limnoria and martesia hastens the loss of preservative from the wood and in this way helps prepare the way for subsequent shipworm attack.

Those unfamiliar with the marine borer problem frequently draw too hasty conclusions because of lack of sufficient service test data. Again, conclusions are frequently based on short time tests. Even under severe conditions, several years may be required to show the relative effectiveness of different preservatives that have a reasonable degree of resistance to borer attack. Unless the purchaser of timber for marine use is willing to take the chance of early failure, he should never accept treatment with a preservative that has not had widespread use for a sufficient time to establish reliable information on its effectiveness.

The Use of Treated Timber on the L. & N.

By L. L. Adams*

Two years after the Louisville and Nashville line between Mobile and New Orleans was put in operation in 1870, teredo so weakened piles in the trestle over the Bay of Biloxi that it gave way under a passenger train. This attack had been anticipated by the engineers in charge of the construction of this line, for in 1869 a wood preserving plant was constructed at West Pascagoula, Miss., now called Gautier, in which piling to be used in the salt water was boiled in creosote. This method was not successful, for the protection afforded by the slight penetration was soon removed by the action of the water, causing the accident mentioned.

This showed very clearly that other steps must be taken to preserve timber in these teredo-infested waters if trestles were to be maintained safely at a reasonable cost. J. W. Putman was then sent to Europe to study the creosoting process and on his return he built a pressure treatment plant at West Pascagoula in 1874. A treating plant has been in operation at Gautier since that time and is now operated by the Louisville & Nashville, where all of its telephone poles, piles and bridge timbers are treated.

At the World's Fair in St. Louis in 1904 the West Pascagoula Creosoting Works exhibited two entrance posts cut from piles which had been in service under the West Pascagoula bridge of the Louisville & Nashville since 1876. It also exhibited a trestle bent constructed from piles and timber from the same bridge, all in excellent condition after 28 years' service. In contrast, a trestle bent was also shown in which the green piles were badly teredo-eaten after being in the water only one year. The treated bent was returned to Gautier after the Fair and re-erected at that point, where it is today, still sound, 64 years after being placed in service.

During 1878 and 1879, a total of 1,574 treated piles were driven in the Biloxi bridge. In 1889, these piles were partly protected with creosote and in 1892, the balance were protected with terra cotta pipe. Scouring under the concrete protection exposed the piles to attack

and logs of heavy drift broke the terra cotta pipe. In 1895, all were protected with cast iron castings and are still in service.

Creosote Used

Actual records of analyses of oil used prior to 1903 have been destroyed, but letters in our files indicate that the naphthalene percentage ran as high as 50 per cent and over, and that the actual analyses were about as follows:

Distillation up to:

210 deg. C.	10 per cent
210-235	50 per cent
235-270	9 per cent
Residue above 270	31 per cent

The replacements of these piles have been as follows:

Year	Number of Piles	Years' Service
1893*	73*	14
1908	136	29
1911	37	32
1912	35	34
1918	32	39
1922	22	43
1923	294	44
1924	132	45
1925	15	46
1926	78	47
1927	88	48
1928	74	49
1929	41	50
1930	14	51
1932	208	53
1934	116	55
1937	85	58
1939	35	60
Original piles remaining in service.....	59	
Total	1574	

* Not destroyed by teredo. Broken off and washed away in 1893 hurricane, which carried off three-quarters of the superstructure of this bridge.

In 1913 and 1914, two additional piles were driven at each bent, 415 being driven in 1913 and 351 in 1914. These piles were protected with cast iron castings like those used on all other piles, after 8 to 10 years' service.

The results obtained from the treatment of piles have demonstrated that the cost of treatment has been more than justified, and since 1916 no untreated piles have been placed in permanent structures on the L. & N. The use of treated timber in bridges and trestles, other than piles, was not started to any extent until the early twenties and it was not until the late twenties that it became the general practice to use treated timber in all permanent bridges and trestles.

About 1932 we began the use of treated gum flooring for overhead highway structures and this proved so successful that its use has been extended to other flooring subjected to abrasive use. At the present time treated gum is being used generally for highway bridges, platforms, highway crossings, push car decks, motor car tool trays, tool boxes, dump trays, flat car decks, etc.

In 1932 the L. & N. purchased 26,141 ft. b. m. of gum lumber for treatment. This amount was increased each year to a maximum of 1,299,407 ft. b. m. in 1938, with the result that a total of 5,839,182 ft. b. m. has been purchased from 1932 to date. In recent years the use of treated material has been extended until at the present time it is a general practice to use it in water tanks, roadway buildings, stock pens, substructures of stations and other buildings.

In 1912 it was decided to treat crossties to extend their life. As the plant at Gautier did not have sufficient capacity to treat all timber and also crossties, a plant was constructed at Guthrie, Ky., and placed in service in 1914, for the treatment of crossties and switch ties exclusively. From 1914 to 1920, inclusive, ties were treated at Guthrie with both creosote and zinc chloride, chiefly with the latter preservative until 1918. At that time it was first decided that zinc chloride was not as satisfactory as creosote and, by the end of 1920, its use was

* Engineer Maintenance of Way, Louisville & Nashville.

discontinued. A total of 2,120,356 ties were treated with this preservative and practically all had been removed from track by the early thirties. On the other hand, the creosoted ties have shown excellent life and, since 1921, all ties have been treated with either straight distillate creosote or an 80-20 creosote-coal-tar solution. We still have in track some crossties that were treated and placed in service in 1914.

At first it was thought that treated red oak ties could not be used safely or economically on our heavier curves and it was not until about 1931 that the use of untreated white oak ties was discontinued on some of our mountain divisions. The use of larger tie plates and gage rods made the use of treated ties in such locations safe and economical.

The use of treated switch ties, like treated timber in bridges, other than piles, was not started until the early twenties and it was not until the late twenties that treated switch ties were used generally over the entire line.

The increased average life of cross, switch and bridge ties obtained by the use of treated timber is shown in the following table:

	1919	1924	1929	1934	1939
Miles track, main and siding	7,663.84	.....	7,509.78	7,119.96	6,873.85
Crossties placed in track	2,168,888	2,247,587	1,821,315	780,753	808,597
FBM switch and bridge ties used.	6,826,088	9,317,996	8,883,294	5,784,568	2,069,194

We realize that we are now in the low cycle of our tie consumption, but it is evident that our requirements will never reach 50 per cent of what they were before we began the use of treated timber.

Our experience shows the importance of treating ties at the proper time. We have treated some ties before they were properly seasoned, and their service life has been only about 60 per cent of that obtained from well seasoned ties. It is equally true that over-seasoned timber containing early stages of decay will fail to give the expected service life. This is one of the reasons why the L. & N. has, for many years, purchased its ties green and watched them carefully throughout the seasoning period, and has seen that they were treated when in the best possible condition. In order to obtain the best conditions, the tie and timber seasoning yards must be well drained and kept free of vegetation at all times. Failure to provide proper seasoning yards will materially reduce the service life of treated timber.

In conclusion, our experience has indicated that the use of treated timber and ties results in definite economy, in both material and labor. Purchase the best timber and ties available. Provide suitable yards for stacking timber and ties during the seasoning period. Watch them carefully during the seasoning period and treat them at the proper time. Do not trust to luck and expect the best results.

Revising Bridge Standards to Reduce Framing of Timber

By G. A. Haggander*

Treated-timber pile-trestle bridges were first used on the Burlington in 1904. In 1912 the general treatment of piles was begun and this was extended in 1916 to ties and fenders; in 1918 to caps and sway bracing, and to stringers and deck planking in creosoted ballasted deck trestles; and in 1926 to stringers in open deck trestles, the only remaining item of untreated timber. The treatment of these stringers was delayed, as it was thought that they could be replaced easily. A considerable amount

of framing was also required in the field, in cutting them to proper length and sizing the ends to proper depth, as required by the plans in use at that time.

The practice of dapping fenders, which was the former standard, was discontinued in 1925, and 5-in. by 6-in. fenders were substituted, cut to length and bored to fit the tie spacing before treatment. They were fastened at each end by means of a bolt, with a lag screw at each intermediate tie.

The ties could, of course, be sized and holes bored before treatment, and this practice was instituted in 1934, when machinery was made available. The problem of preframing and preboring caps was likewise not difficult. However, the framing of stringers before treatment was difficult to carry out.

After much thought, it was considered best to work up new designs, considering treated timber as a new kind of structural material, quite different from untreated timber. Little change could be made in the bents. No cutting of piles was allowed for the fitting of sway braces, but blocking of various thickness is supplied with each bridge order to allow filling in between the piles and sway brace, where necessary.

The holes for sway-brace bolts are treated in the field with creosote applied by a pressure gun. Holes in piles for longitudinal girts were eliminated by fastening these girts to the sash bracing. This was done by placing a 12-in. by 14-in. block between two piles and between the two sash braces, and bolting the girts to this block. The tops of the piles are painted with three coats of warm creosote and are then covered by a cap of heavy roofing paper.

The caps are sized to depth, and holes are bored for drift bolts and sway brace bolts before treatment. When the tops of the piles are bored for drift-bolt holes, they are filled with creosote before the drift is driven. Much thought was given to a different type of fastening between the cap and the pile, such as bolted strap irons on each side of the pile, but none seemed better than the old type of drift bolt.

In laying out the stringer plan, it was decided to frame the stringers to proper depth in all cases. Consideration was given to driving the bents to a predetermined spacing and using butted stringers of a standard length. It is possible to do this in most cases, if sufficient care is used. Consideration was also given to driving the bents in the usual way, measuring the spacing and framing the stringers to fit. This meant two trips for the bridge and building gang that was to do the work, and considerable delay in completing bridges, for which reason it was not adopted, except for redecking bridges having creosoted bents, when the untreated stringers required replacement.

The plan finally adopted calls for an alternate lapping and butting of stringers and requires no cutting to length before treatment. Besides saving this cost, the bearing area of the stringers on the caps is increased materially, and this overcomes one of the first signs of weakness in a pile trestle bridge,—that is, crushing of the ends of stringers.

The fastening of the stringers to the caps was the next problem. The use of drift bolts in the ends of the stringers was not desirable because of the effect on the caps and possible enlargement of these vertical drift bolt holes in the stringers, with consequent entrance of water at the point of bearing. Chord bolts were considered necessary and it was planned to hold the chord to the caps by some means of horizontal and vertical fastening to these bolts. Angles or bent plates bolted to the caps through which a chord bolt would pass were considered, but a stay rod fastened to the upper chord bolt and bolted to the opposite side of the cap was adopted.

The two chord bolt holes in each end of the stringers

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and the stay rod holes in the caps are bored in the field. These are horizontal holes which make entrance of water difficult and we felt that field treatment of these holes was economical and preferable to laying out the chords after the bents were driven, and preboring the holes, or preboring them and attempting to drive the bents accurately. In the early designs, a channel-iron spacer was used between the widely spaced stringers at each end of the chord, to stiffen up the stringers and prevent lateral motion of the tops. These required considerable metal, were difficult to place and were soon found to be unnecessary. After some trial, the lower-chord bolt hole was omitted and only the upper one used. The stay rods are pulled in tight against the bottom of the stringers before being bolted, to prevent lateral displacement or warping of the stringers, and the stringers are pulled into close contact by the chord bolts.

Some objection was raised to the spread of the stringers under this plan, which moves some of them further from the rail. Calculations of the difference in deflection showed that this was not serious and this was borne out by measurements in the field, as the 8-in. by 8-in. ties used distribute the load quite uniformly.

Trestles of this type have been standard on the Burlington since 1929 and are well liked by our construction and maintenance forces. Various devices have been developed for boring the chord bolt holes in the proper plane, cutting off piling square, etc. A small amount of vertical adjustment is available without providing longer stay rods, but with well-driven bents this is seldom needed.

In our designs, we have used single panel-length stringers. This type can also be used with continuous chords. Our designs have standard panel lengths of 13 ft. 6 in. and 19 ft. 6 in., the latter not being used extensively. For light branch lines, the 13-ft. 6-in. span has six 8-in. by 16-in. stringers per panel. This can be converted easily to eight stringers without shifting stringers or putting in more stay rods, by adding the necessary stringers and using longer chord bolts. The number of stringers can be increased to nine in cases of very heavy loading.

Ties are spaced 14, 16 or 18 in. center to center, according to the character of the line and engine weight. The ties are fastened to the stringers by means of two $\frac{1}{2}$ -in. line spikes in every third tie to permit shifting of the ties on the stringers for lining track.

Our practice for bridge ties on steel bridges is somewhat different than the usual practice of dapping full-sized ties to fit variations in thickness of cover plates, etc. We keep in stock three sizes of ties—8 in. by 8 in., 8 in. by 10 in., and 8 in. by 12 in., all 10 ft. long. These are prebored for fender and track-spike holes and are sized to uniform depth. On wooden trestles and steel bridges having a uniform height of bearing surface, they can be used without further work.

On steel bridges having cover plates of varying thickness on the stringers or deck girders, a full size tie of the depth required by the girder spacing is placed on the top cover plate. All of the ties on the span are of the same size and the required additional depth on the other cover plates is furnished by means of shims fastened to the bottom of the ties. These shims are treated sap gum about 2 ft. 6 in. long, and of the required thickness. They are nailed to the bottom of the tie at the point of bearing through four prebored holes. Near each end of the shim, outside of the bearing on the steel, is nailed a U-shaped wrought iron strap 1 in. by $\frac{1}{8}$ in. in section, which is designed to help hold the shim in place and prevent splitting. After the shims are fastened, holes are bored for rivet heads, before placing the ties. Depth of shims is obtained by taking levels with an instrument on the top

surface of the steel and top of rail, or measuring down from the rail with a rule if the track is in good surface.

The advantages of this method are that only three sizes of timber must be carried in stock, and that the heavy timber ties do not need to be prefabricated. The only special stock required is that of shims, which is a comparatively small item. While this general method of using shims has been in use for many years with good results, the change to gum shims and the use of straps was made eight years ago in a successful effort to prevent splitting of the shims.

In addition to standard material, prefabrication is also done on a considerable amount of special material. Sheer booms, draw protections, culverts, timber piers, frame bents, tunnel linings, and a large variety of other structures are framed before treatment from special plans.

In 1916, we started the practice of showing the length of piling by cutting the distance from a scribe mark located below the cap, to the point of piles, in 4-in. Roman numerals. This information was intended to give a permanent field record, supplementing the usual office record that is especially useful during floods for determining the penetration of piling.

Because these marks are difficult to read at night and because they may be covered with water, the distance from the top of tie to the point of piling is also given by the use of 2-in. stainless steel numbers nailed to the fender. The latter are entirely for use during floods in an effort to give our field forces exact information for use when taking soundings. They are equipped with a lead sounding weight for this purpose.

The prefabrication of timbers is done at our Sheridan, Wyo., treating plant. Douglas-fir timber is shipped in from the west coast for seasoning, prefabrication, and treatment, and then shipped on east for the remainder of the system, with no back haul. The prefabrication plant is completely equipped for dressing and incising timber, boring, sawing, etc., by means of power machinery. Lumber is purchased rough and is not dressed to size until well seasoned so that the element of shrinkage is practically eliminated.

I wish again to stress the desirability of considering treated timber as a separate material for construction purposes, the same as structural steel or reinforced concrete. It should not be put in the same classification as untreated timber. When we first began to use treated timber, the old designs, calling for untreated material, were used, and much unnecessary framing and boring resulted. This in turn caused early decay. By making special designs to fit the requirements of treated timber, and by providing plants for prefabricating it, maximum life and economy are obtained, the result for which we should aim.

* * *



A New York, Ontario & Western Crew Hooks on the Motive Power at Middletown, N.Y., As a Flurry Forewarns of Snow

Santa Fe Completes First Diesel Freight Run

THE new 5,400-hp. Diesel-electric freight locomotive, recently delivered to the Atchison, Topeka & Santa Fe by the Electro-Motive Corporation, General Motors subsidiary, La Grange, Ill., and placed in regular main-line freight service at Argentine, Kan., on Feb. 5, as announced in last week's *Railway Age*, completed its first run to Los Angeles, Calif., on February 8. In handling this freight train the Diesel-electric locomotive demonstrated notably reliable performance, ample power to haul the train up heavy grades, and ability by means of the dynamic braking feature to ease the train down heavy grades with substantially less air-brake application and attendant wheel heating and brake-shoe wear.

The test was witnessed by responsible officers and engineers of both the railway and the locomotive builder; also by at least a score of representatives of the press who were accommodated in five business cars coupled back of the locomotive and dynamometer car and just ahead of the mixed freight cars and caboose which constituted the rest of the train. Much favorable attention was attracted by the train en route, the locomotive being made available for short public inspections at several points along the line, including two where programs of local interest were broadcast. No special attempt was made for a speed record, the usual number of delays for passenger and other train meets being encountered.

Summarizing briefly, on this first run of a Diesel-electric mainline freight train in regular commercial service, the train handled between two and three thousand tons in a varying number of cars from 49 to 68, a distance of 1,782 miles from Argentine, to Los Angeles, in 55 hrs. running time. The average speed was 32.5 m. p. h., maximum speed 65 m. p. h., maximum drawbar horsepower, 4,400; gross ton-miles in thousands, 5,181; fuel consumption per mile, 6.05 gallons.

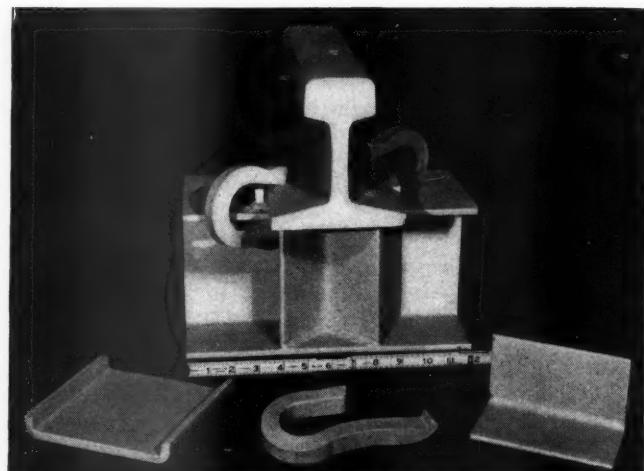
Dynamic braking was used at four places during the run for a total of 83 miles; namely, from Mountainair, N. M., to Belen; Supai, Ariz., to Ash Fork; Louise, Ariz., to Yucca; and Summit, Calif., to San Bernardino. Maximum grades ranged from 1.27 to 3 per cent. At a speed of 20 m. p. h. the retarding effect exerted was 48,000 lb. and the horsepower, 2,560. At 29 m. p. h. the corresponding figures were about 35,000 lb. and 2,730 hp.

Where the dynamic retarding brake was used, it was necessary to set the train air brakes only about one fourth as much as usual. There was no evidence of excessive

wheel heating throughout the run and when stops were made after descending heavy grades, the wheels never much exceeded bare hand temperature. The total energy absorbed by the dynamic brake during its use on this run is estimated at nineteen billion seven-hundred million foot pounds, or approximately 10 per cent of the energy used to move the train during the entire run.

Bethlehem Develops New Steel Crosstie

A METAL H-beam tie of simple design, and with only four loose parts, has been developed by the Bethlehem Steel Company, Bethlehem, Pa., for use in mine and industrial tracks; it is known as the Anchor tie. The new tie is 8 ft. long and consists of a 6-in. H-beam weighing 15½ lb. per ft. The gage of the track is definitely fixed at the place of manufacture by



This View Shows the Different Parts Used In the New Tie and Also How They Appear When Assembled

two 3/8-in. double-shouldered tie plates, 5½ in. wide, that are arc-welded to the tie. Two 3-in. by 3-in. by ¼-in. angles are arc-welded in position directly beneath each tie plate between the two flanges of the beam to act as stiffeners for the tie and as retainers for the spring clamps by means of which the rails are fastened to the tie.

It is pointed out that the combination of beam, tie



Santa Fe Diesel-Electric Freight Locomotive and Test Train at Gallup, N. M.



A Section of Newly-Laid Industrial Track Showing Anchor Ties in the Foreground

plate and angles forms a stiff pedestal construction at the point of maximum load. The spring clamps that are used for fastening the rails to the ties are said to have sufficient "give" to impart a resiliency to the track structure, thereby eliminating any detrimental effects that a rigid pedestal construction might have. Owing to the

reinforcing effect of the welded tie plates and angles, it is claimed that the tie has unusual strength for a light-weight construction. Furthermore, it is pointed out that there are no holes or notches in the tie section to weaken it at any point.

The clamps, of which there are four for each tie, are of heat-treated spring steel, and are driven into place with an ordinary spike maul or sledge hammer. As the hook end is driven into position at the base of the rail, the other end of the clamp snaps over the corner of the angle, a hump near the end preventing the clamp from slipping back. To further lock the clamp into position, the end engages the web of the tie, forcing the hump firmly against the angle. Also, as the nose of the clamp bears against the base flange of the rail, the loop produces a slight spring action which is said to impart the resiliency to the track structure that was mentioned above. To remove the clamp from the tie, a blow is struck with the spike maul against the hump, driving it back over the corner of the angle.

It is claimed that Anchor ties are easy to install and that they are economical to maintain. A total of 400 of the new ties have been tested for the last three years in a section of industrial track subjected to exceptionally heavy service. It is said that these ties have withstood lateral movement exceptionally well and that, after this three years service, the surface and alignment are still almost perfect.

New Books . . .

Traffic Management, by G. Lloyd Wilson. 453 pages. 8 $\frac{1}{2}$ by 5 $\frac{1}{2}$ in. Bound in cloth. Published by the D. Appleton-Century Company, 35 West 32nd street, New York. Price \$3.50.

"The old conception of an industrial or commercial traffic manager, current during the riotous days of special privileges and rebates, was often that of a man sufficiently familiar with the inner workings of the carriers to obtain whatever rebates could be obtained and honest enough to turn over to his employer any rebates he received from the carriers' agents." In contrast, the well-informed traffic manager of today appreciates the significance of adequate rates and reasonable costs and "interprets his duty as that of a skilled and intelligent user and conserver of transportation facilities." So, believes Dr. Wilson, has the role of industrial traffic manager become broader than one of executing "feats of legerdemain" for his employers.

Having this ideal in mind, the distinguished professor of transportation and public utilities at U. of P.'s Wharton School presents a revised edition of his "Traffic Management" (previous edition published in 1926). The book leaves almost nothing out; everything is covered from detailed regulations pertaining to over-charge claims to the organization of an intra-plant switching railroad. Complete organization set-ups are suggested for every possible type of traffic department—"non-physical" consultant types for small firms; large units for big industries operating truck fleets and railroads; traffic service bureaus for cities and associations. The only omission your reviewer was able to detect is the failure of the chapter dealing with motor transport to mention anything about the big private truck fleets making long-haul runs, which are operated under traffic department management.

The book affects railroaders in two ways. Directly, as readers, it will familiarize them in detail with the business practices and problems of their customers. Indirectly, it will help them by educating their customers. For Dr. Wilson, a most sympathetic and able student of the carriers' problems, knows full well what "they are up against." Again and again his book urges traffic men to temper their demands on the roads; to cut down expensive tracing of shipments; to refrain from excessive calls for expediting; to co-operate in reducing loss and damage.

History of German Transportation, Volume I (In German). 111 pages. 11 $\frac{1}{2}$ by 8 $\frac{1}{2}$ in. Bound in paper. Published by the Concord Press (Konkordia-Verlag), Leipzig C 1, Germany.

This is the first of a series of volumes to cover the history of transportation and communication being issued under the sponsorship of the German government. This volume contains three articles: (1) One Hundred Years of the Berlin-Potsdam Railroad; (2) History of the Braunschweig-Wolfsburg Line—First State-Owned Railroad; and (3) History of the Dusseldorf-Erkrath and Zochdahl on the Dusseldorf road.

Model Railroads, by Edwin P. Alexander. 283 pages. 9 $\frac{1}{2}$ by 6 $\frac{1}{2}$ in. Bound in cloth. Published by W. W. Norton & Co., New York. Price \$4.

The Association of American Railroads says that some 100,000 model railroads collectively own and operate enough miniature trackage to reach from New York to San Antonio, Tex., and that their total investment in trains and tracks is about \$10,000,000. To this growing recreation industry there comes a definitive book on the entire field by one of the country's pioneer model railroaders. Mr. Alexander was the builder of the Chesapeake & Ohio's large model exhibition at the Century of Progress in Chicago in 1933, an exhibit which did much to generate interest in modeling in the country. Several of his historic locomotive models are installed in lounge cars of the Twentieth Century Limited.

The book may appear expensive—but not when the quality of the paper and the great number of fine photographs, floor plans and sectional diagrams are taken into consideration. Among the most valuable of its features are photographs of typical railroad scenery which lends itself well to the modeler's art. There also appear complete plans of the more interesting locomotive and car types.

NEWS

Pres. Lends Ear to Superhighways

Listens to the roads' chief's scheme to "take up slack" when war effort ends

President Roosevelt saw Public Roads Commissioner Thomas H. MacDonald on February 7 for the purpose of discussing the highway situation as it affects national defense and also the subject of a system of national super-highways.

As he has often done recently, the President at his press conference on February 7, in discussing his appointment with Mr. MacDonald, was careful to point out that he was not advocating the immediate construction of a national system of superhighways, but was considering the idea as something to be used as a back-log of public works projects which could be utilized when the emergency is over to take up the slack of unemployment which will naturally result from the cessation of work in the munitions industries. In this regard, Mr. Roosevelt said that it was not at all unlikely that the present Congress will authorize many projects of a public nature, such as highways, airports, hospitals, and flood-control and harbor improvement works. Of course, he continued, no money would be appropriated at this time, but it is his intention to have this reserve of approved projects which can be thrown into the breach at any time that they are needed as a means of relieving the unemployment which will result from the ending of the emergency.

Mr. Roosevelt also told his press conference on February 7 that he and Mr. MacDonald would also discuss the problem of the excess condemnation of land for highways. Such a procedure of the government buying more right-of-way than it needed to construct a new highway and then gradually selling the excess land at a profit or, as he called it, an "increased increment" resulting entirely from the location of the road, has been used in several states, he continued. It was his belief that such a procedure applied to national super-highways might result in sufficient profit to pay for a great part, if not all the cost of the roads.

That the President favors the idea of excess condemnation was quite evident when he went on to say that the fact that a man happened to have a farm which was located in proximity to a new road and the value of his farm was enhanced by \$15,000 or so, there was no reason why he should get this increased increment when

someone else whose land happened to be five miles away did not share in the added value brought by the road.

Asked where some of these super-highways might be located, the President said that undoubtedly one would parallel the Atlantic Coast from Maine to Florida, but he did not know whether it would be at the water's edge, 10 miles inland, or 50 miles inland.

One reporter wanted to know whether it would not be necessary to construct some new highways as national defense projects before the emergency was over. Mr. Roosevelt asked where there was a shortage of transportation. The newsman answered, "Between Washington and Boston." To this answer Mr. Roosevelt asked whether the transportation section of the National Defense Commission had made any such admission or finding. The reporter did not know of any, but nevertheless asserted that all one had to do was to drive the route to find out that a better road was needed.

Unit Bill of Lading

The Association of American Railroads has prepared a folder illustrating and explaining the new form of harmonized bill of lading, waybill and shipping order. The new form is designed to promote efficiency through simplifying the preparation of bills of lading, freight waybills, shipping orders and shippers' records by combining all of these operations in one; and the folder is for the purpose of acquainting shippers with its advantages.

Latin American Railroads Hold Congress

The fourth South American Railway Congress opened in Bogota, Colombia, on February 7. Delegates attending the Congress from Argentina, Bolivia, Chile, Ecuador, Venezuela, Uruguay, Brazil, Peru and Colombia were scheduled to consider the establishment of better international railway connections throughout the continent and the reform of present national legislation affecting railroads.

Representation of Employees

The National Mediation Board has announced results of recent elections in representation-of-employees disputes on the Atlantic Coast Line and the Missouri-Illinois. In the A.C.L. election the Brotherhood of Sleeping Car Porters won the right to represent train porters, chair car attendants and maids; on the Missouri-Illinois, the National Organization, Masters, Mates and Pilots of America won the right to represent captains, mates and deck hands.

Finds NYC Afoul of Panama Act

Examiner contends that road controls lake carrier—not permitted by law

Finding that the New York Central's interest in the Nicholson Universal Steamship Company constitutes a violation of the so-called Panama-Canal-Act provisions of the Interstate Commerce Act, Examiner R. G. Taylor has recommended in a proposed report that the Interstate Commerce Commission take "appropriate steps" to effect discontinuance "of this unlawful relationship." Leading up to this recommendation were other proposed findings to the effect that because competition exists between the N. Y. C. and Nicholson the interest of the former in that Great Lakes water line is an interest as is contemplated by the aforementioned Panama-Canal-Act provisions, now found in section 5 of the Interstate Commerce Act as amended by the Transportation Act of 1940.

The proceeding, docketed as No. 28162, is an undertaking to determine the status of the New York Central-Nicholson tie-up which has come about by reason of the relationship of N. Y. C. affiliates to the United States Freight Company. The latter, owner of the Universal Carloading & Distributing Company, was former owner also of Nicholson, which has been sold to Overlakes Freight Corporation under a purchase agreement interpreted by the examiner as leaving the president of United States Freight with "dominating power" over the actions of Nicholson.

The proposed report traces the relationship of the New York Central and United States Freight from back in 1929 when the railroad advanced to its affiliate, Merchants Despatch, Inc., some \$13,500,000, while Merchants Despatch in turn advanced a similar amount to the L. C. L. Corporation. The latter used the funds to acquire 126,600 shares of United States Freight stock, pledging such stock with Merchants Despatch as collateral under an agreement which stipulated that interest on L. C. L.'s loan from Merchants would be equal to the dividends received on the collateralized U. S. Freight stock. Subsequently there were some changes in the amounts of these advances and the holdings of U. S. Freight stock; and also the Securities Corporation of the New York Central Railroad assumed Merchants Despatch's role, while that of the L. C. L. Corporation was assumed by the Linden Securities Corporation. Thus it is the U. S. Freight stock

owned by Linden and pledged to Securities that has been trustee with former Interstate Commerce Commissioner B. H. Meyer in compliance with the I. C. C.'s report in the Freight Forwarding Investigation. F. N. Melius, former assistant general manager of the New York Central, has been president of U. S. Freight since November 17, 1930, and he was president also of Nicholson from that date until April, 1932, when that lake line was sold to its present owner—the aforementioned Overlakes Freight Corporation.

The examiner found in N. Y. C. files evidence which he interpreted as indicating that one reason for U. S. Freight's desire to dispose of its interest in Nicholson was "the desire of the New York Central to so place these steamship interests that a violation of the Panama Canal Act could not be claimed or proven." In any event an agreement was entered on April 4, 1932, between U. S. Freight and Fred L. Hewitt, of Montville, N. J., whereby each party paid the other \$1 and "other good and valuable considerations." Hewitt agreed to organize Overlakes to take over U. S. Freight's holdings in Nicholson. This purchase agreement provided, among other things, that the president of U. S. Freight would have a voice in the selection of Overlakes' officers; also that, as the examiner put it, "no action of importance" could be taken by Overlakes without unanimous vote of its board of directors, on which U. S. Freight would retain a minority membership in the ratio of three-to-seven. The examiner cited other provisions of the agreement to bolster his aforementioned conclusion that the president of U. S. Freight "still holds a dominating power" over actions of Nicholson and its new parent, Overlakes.

Thus, Mr. Taylor said: ". . . without regard for what might be termed the New York Central's controlling interest in U. S. Freight through its ownership of 49.56 per cent of that company's outstanding stock trustee to Hon. Balthasar H. Meyer, there is still an avenue open through which control may be exercised. In other words it is still possible to exercise control without violating the trust indenture." Later on the proposed report cited evidence from the Freight Forwarding Investigation to the effect that the U. S. Freight Company's annual report to its stockholders "is approved by certain officials of the New York Central before printing and distribution." The examiner added: "The necessity of such approval by the New York Central connotes participation in the affairs of U. S. Freight, which latter company still maintains its dominating directorship in Nicholson . . . and Nicholson admittedly competes with the New York Central."

Furthermore the examiner does not think the trusteeing of U. S. Freight stock is sufficient to avoid a violation of the Panama Canal Act provisions, especially in view of the Transportation Act of 1940's inclusion of "a voting trust or trusts" among the types of control contemplated by those provisions. Moreover he would have the commission reject a contention of New York Central counsel that "the proof necessary to establish unlawfulness under the Panama Canal Act is exactly the same

Rutland Strike Called For February 14

The 1,500-odd employees of the Rutland were scheduled to strike at midnight on February 14 in protest against a permanent wage cut on a sliding scale of 10 to 30 per cent which is made effective at 6 P. M. the following day. At time of going to press, representatives of the unions and the railroad are deadlocked and no further conferences are in prospect. The wage cut and strike were originally scheduled to go into effect on September 15, 1940, but were deferred and the *status quo* frozen for a five months' period following an eleventh-hour truce. Negotiations under the Railway Labor Act had already deadlocked and the services of the National Mediation Board withdrawn before the strike was announced.

as that required under the 'commodities clause,' i. e., a showing that "the two corporations are managed and treated as one."

Western Railway Club Meeting

Dr. Louis L. Mann, rabbi of the Chicago Sinai congregation, will be the speaker at a meeting of the Western Railway Club on February 17. His subject will be Converting Liabilities into Assets.

Tie Producers Convention

Members of the Executive committee of the Railway Tie Association, at a meeting in Louisville, Ky., on February 3, voted to hold the twenty-third annual convention of this organization at Hot Springs, Ark., on May 21-22.

12,200 Air-Conditioned Cars

Class I railroads and the Pullman Company had 12,200 air-conditioned passenger cars in operation on January 1, according to the Association of American Railroads. This was an increase of 485 compared with the number of air-conditioned passenger cars on January 1, 1940.

Of the total number of such cars, Class I roads on January 1 had 6,961, an increase of 365 compared with the same date last year. The Pullman Company had 5,239 air-conditioned passenger cars in operation, or an increase of 120 compared with January 1, 1940.

Canadian National Establishes Convenient Photo Service

To expedite the handling of photographs for newspaper and magazine articles and save the expense of mailing out prints which may or may not be of service to editors, the Canadian National has established an organized photo service in all of its publicity offices. From time to time these offices mail out 17-in. by 22-in. sheets on which are printed, by the inexpensive off-set method, samples of photographic prints available without cost from the railroad, complete with suggested captions. Each print is marked by number. With

the sheet is sent a self-addressed penny post card on which editors may check the photographs they desire and type name, publication and address. The railroad then sends out 8-in. by 10-in. glossy-finish prints of the photographs desired.

Club Meeting

The New England Railroad Club will hold its next meeting at the Hotel Toussaint, Boston, Mass., at 6:30 p. m. on March 11. Maurice Dugan, special representative, New York, New Haven & Hartford, will present a paper entitled "Public Relations and the Railroads." A motion picture, "This Is New England," will be shown.

Famous Schneider Works to Produce Locomotives

The world-famous Schneider armament works at Le Creusot, Occupied France, which has been idle since June 17, 1940, is to be re-opened as a locomotive and car equipment plant in the near future, according to a copyrighted article by Edward Haffel appearing in the New York "Herald Tribune." Although the Schneider Works has manufactured locomotives in the past it has been principally an armament factory, ranking as one of the largest in the world.

Maryland Highway Chief Asks Higher Truck Taxes

Higher registration fees on trucks and trailers in the state of Maryland were advocated by Ezra B. Whitman, chairman of the Maryland Roads Commission, in an appearance before the state Senate Finance Committee on February 5. The highway chief pointed out that the commission would have available only \$1,082,000 for construction of roads in the state in 1941 and the state is permitting Maryland trucks to use its highways by paying registration fees only half as much as those charged in states immediately adjoining. The fees he advocated would net the state an additional \$1,000,000 annually.

Jones Sees Loadings Indicating Broad Area of Good Business

"Railroad carloadings advanced contrasonically through January 25, with shipments indicating that expanding business is being spread over a broad economic area," said a February 7 statement from Secretary of Commerce Jesse Jones. Summarizing the statement as a whole, the Department of Commerce press release said the Secretary had found that "Business activity continued to advance in January, stimulated by the larger volume of defense expenditures, the increased flow of private capital investment, and a steadily increasing consumer demand accompanying the rise in employment and income payments."

Hearing February 26 on All-Freight Rates to South

The Interstate Commerce Commission has set February 26 as the date for the opening of hearings in Washington, D. C., before Examiner Way in No. 28323 and proceedings linked therewith which involve the lawfulness of all-freight railroad and

motor common carrier rates from Chicago and from Mississippi and Ohio river crossings to points in Southern territory. At the same time the commission modified previous orders to restrict the list of motor carrier respondents to those participating in tariffs issued by the Southern Motor Carriers Rate Conference and the Central and Southern Motor Traffic Association.

January Export Traffic

Cars of export freight, other than grain, unloaded at Atlantic and Gulf ports in January this year totaled 41,909 cars, according to reports compiled by the Manager of Port Traffic and made public by the Association of American Railroads. In January, 1940, there were 41,961 cars unloaded. Cars of grain for export unloaded in January this year at these ports totaled 2,012, compared with 6,208 in the same month last year.

Beginning with the month of February, similar data to that now being issued for the Eastern and Southern seaboard, will be compiled for Pacific Coast ports. "No congestion or delay to traffic exists at any of the Atlantic and Gulf ports, due to the cooperation of steamship lines, port authorities, exporters and shippers," the A. A. R. said.

Calling Long Flat Cars

W. C. Kendall, chairman of the Car Service Division, has sent to all railroads a circular calling attention to conditions under which "requirements for extra long (50 ft. and over) and extra wide flat cars are becoming increasingly important." The demand conditions arise from the seasonal movement of agricultural machinery and the requirements of national defense traffic.

The situation, Mr. Kendall went on, justified special instructions stipulating that the flat cars involved should not be used for loading that can be accommodated on shorter cars, and that when foreign cars cannot be loaded strictly in accordance with the Car Service Rules they should be expedited in home route to their owners. Figures supplied by Mr. Kendall indicated that 87 per cent of the ownership of the long flat cars is in Western territory; and "as indicating that the situation is tightening up, already two Western roads owning a considerable number of long flat cars have appealed to us for a more prompt return of their cars."

Ralph Budd Given Washington Award

Ralph Budd, president of the Chicago, Burlington & Quincy, has been selected as the recipient of the Washington Award for 1941 by a commission representing the Western Society of Engineers, the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers and the American Institute of Electrical Engineers. The presentation will be made at a dinner at the Palmer House, Chicago, on February 24. This is the second award Mr. Budd has received in recent weeks, the previous one being the John Fritz Medal awarded him by the American Society of Civil Engineers at New York on January 15 "for notable

scientific and industrial achievement." The Washington Award will be given Mr. Budd "for vision and courageous leadership in advancing the technological frontiers of high-speed railroad transportation."

Freight Car Loading

Loading of revenue freight for the week ended February 8 totaled 710,196 cars, the Association of American Railroads announced on February 13. This was a decrease of 4,127 cars, or 0.6 per cent, below the preceding week, but an increase of 82,767 cars, or 13.2 per cent, above the corresponding week in 1940 and an increase of 133,844 cars, or 23.2 per cent, above the same week in 1939.

As reported in last week's issue, the loadings for the previous week ended February 1 totaled 714,323 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, February 1			
Districts	1941	1940	1939
Eastern	162,024	149,368	130,736
Allegheny	157,978	138,863	112,444
Pocahontas	48,704	47,434	38,008
Southern	111,983	100,729	91,910
Northwestern ..	81,019	75,821	66,700
Central Western ..	101,742	96,801	89,389
Southwestern ..	50,873	48,814	43,940
Total Western Districts	233,634	221,436	200,029
Total All Roads	714,323	657,830	573,127

Commodities

Grain and grain products	30,507	32,080	29,541
Live stock	10,411	10,914	11,371
Coal	152,157	159,794	129,269
Coke	13,819	12,156	7,871
Forest products	39,511	31,374	25,525
Ore	12,448	10,087	9,062
Merchandise l.c.l.	151,283	146,788	146,142
Miscellaneous	304,187	254,637	214,346

Cumulative total 5 weeks	3,454,418	3,215,565	2,861,857
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In Canada.—Carloadings for the week ended February 1 totaled 53,461, as compared with 52,085 for the previous week and 50,607 a year ago, according to the weekly report of the Dominion Bureau of Statistics.

Total for Canada:	Total Cars	Total Cars Rec'd from Loaded	Connections
February 1, 1941	53,461	28,330	
January 25, 1941	52,085	27,756	
January 18, 1941	51,324	27,103	
February 3, 1940	50,607	25,512	
Cumulative Totals for Canada:			
February 1, 1941	251,709	134,370	
February 3, 1940	235,533	119,181	
February 4, 1939	198,854	104,305	

West Virginia Law Is Upheld by High Court

The United States Supreme Court, at its meeting on February 10, refused to review a three-judge lower court decision which had upheld the constitutionality of a West Virginia statute which made unlawful the operation on highways of the state of any vehicle having two levels for the carriage of other vehicles any of which is carried at a height of 115 inches above the ground, and any vehicle carrying any other vehicle, any axle of which is more than three feet higher than any on such other vehicle.

In this case, which was docketed as

Philadelphia-Detroit Lines, Inc., versus Simpson, the court, in effect held that such a restriction on the car-over-cab transporting of new or used automobiles does not violate the commerce clause of the federal constitution or the equal protection clause of the Fourteenth Amendment. Some time ago a similar Pennsylvania statute was upheld by the court.

U. P. Publicizes Nebraska Industrial Property

The Industrial department of the Union Pacific has prepared a 16-in. by 11½-in., 98-page brochure printed in brilliant colors describing tracts for agricultural and industrial development owned by the road at Omaha, Neb.; Council Bluffs, Iowa; Fremont, Neb.; Columbus, Norfolk, Grand Island, Hastings, Kearney, North Platte, and Gering. Similar to large booklets recently prepared for Los Angeles (Cal.) and Pacific Northwest industrial properties, the brochure describes each industrial area with reference to power and transportation facilities, labor, natural resources, markets, etc., and provides a large-scale, colored, detailed map for each, showing the tracts in relation to transportation facilities (including improved inland waterways) and plants and warehouses already located therein. Included with the maps are large aerial photographs upon which are superimposed marks designating boundaries of the tracts. The book is bound in stiff cardboard of brilliant colors.

1940 Locomotive Shipments

Locomotive builders other than railroad shops shipped 588 locomotives in 1940 as compared with 356 in 1939, according to reports received by the Department of Commerce's Bureau of the Census. Meanwhile data supplied to the Bureau by the Car Service Division, Association of American Railroads, show that 74 locomotives built in railroad shops were placed in service last year as compared with 50 in 1939. As of the close of last year the outside builders had unfilled orders for 353 locomotives, while there were 13 on order in railroad shops.

The 588 locomotives shipped last year included 95 steam, one electric, 414 Diesel-electrics and 19 of other types for domestic service, and 56 steam, one electric and two Diesel-electrics for export. The 74 built in railroad shops included 40 steam, 21 electrics and 13 "gas or Diesel."

Shipments in December, 1940, totaled 70 locomotives, as compared with 86 in November and 41 in December, 1939. None of the 74 locomotives built last year in railroad shops was listed as having been placed in service in December; in December, 1939, there were seven.

January Employment 2.94 Per Cent Above 1940

Railroad employment decreased another 0.63 per cent—from 1,024,806 to 1,018,306—during the one-month period from mid-December to mid-January, but the January total was 2.94 per cent above that for January, 1940, according to the Interstate Commerce Commission's compilation based on preliminary reports. The index number based on the 1935-1939 monthly average and adjusted for seasonal variation stood

at 99.8 as compared with December's 103 and January, 1940's 101.1.

January employment in four of the seven groups was under that of December, the largest decline being the 2.4 per cent drop in the group embracing transportation employees other than train, engine and yard. Meanwhile January employment in the three other groups was up less than one per cent as compared with the previous month. As compared with January, 1940, last month's employment in all groups was up, the largest increase being the 3.79 per cent rise in the maintenance of way and structures group.

Railroads Doing Smooth Job of Transporting Military Personnel

"Without the slightest difficulty or interference with other traffic, more than 207,000 officers and men of the Army, Civilian Conservation Corps, Marine Corps, and Navy, as well as draftees, were transported by the railroads in January," said a February 10 statement from the Association of American Railroads. Of this number, 132,080 were transported on 385 special trains throughout the country. The remainder were handled on regular trains during the month.

The movement of these men required 633 routings, which were made by the individual railroads in cooperation with the Military Transportation Section of the Association of American Railroads. This Military Transportation Section not only directs such movements of military personnel, but it also supervises the movement of supplies and materials for the military construction projects now under way throughout the nation.

Of the 385 special trains operated last month, 297 were necessary to handle 103,303 officers and enlisted men of the Army; 70 were required for the movement of 22,478 members of the Civilian Conservation Corps; seven for the movement of 4,376 members of the Marine Corps, and 11 for the movement of 1,923 members of the Navy. In addition to these special train movements, 15,923 service men were carried on regular trains during the month. The railroads also transported in January, 59,075 selectees, who were moved in small parties on regular trains from induction stations to reception centers.

Electro-Mechanical Vehicle Transmission

The "Electrogear," an electro-mechanical transmission, which may find its way into railroad service, was described in a paper by Ernst Weber, presented at the Winter Convention of the American Institute of Electrical Engineers, held in Philadelphia, January 27-31. Up to the present time, it has been applied to a 36-passenger city bus, to several five-passenger automobiles and to a 12-ton track-laying vehicle. The drive is relatively light in weight and will automatically transform the engine output into the required torque-speed ratio for all conditions of grade and acceleration. This includes over-drive at high speeds, in which the drive-shaft speed is higher than that of the engine. Dynamic braking is also possible.

The transmission consists of essentially

of two electrical machines with a planetary gear between them. The machines are connected electrically and they serve to retard or accelerate certain parts of the gear, depending upon the vehicle speed. The transmission's principal claim to distinction lies in the fact that the electrical machines are required to transmit full engine output only at the moment of starting, after which they handle power in proportion to the relative speeds of the engine and the drive shafts. The machines applied to the bus have about one-fourth the rating of the engine.

The report, which describes tests made on the bus, states that the bus was worked until the radiator boiled, without overheating the electrical machines. Test performance curves also show excellent gradeability, high efficiency and low fuel consumption. The transmission was invented by A. H. Neuland, and developed during

recent years through the support of The Power Transmission Company, New York, N. Y., owners of the patents.

November's Net Income Was \$30,809,337

Class I railroads reported for November a net income after fixed charges of \$30,809,337 as compared with a net income of \$33,060,874 in November, 1939, according to the Interstate Commerce Commission's monthly compilation of selected income and balance sheet items. The year's first 11 months showed a net income of \$138,517,515 as compared with a net income of \$58,016,700 for the first 11 months of 1939.

The roads not in receivership or trusteeship had a net income of \$33,870,565 as compared with \$36,775,761 for the same month of last year; while the net income for the first 11 months of this year was

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 131 Reports (Form IBS) Representing 136 Steam Railways
(Switching and Terminal Companies Not Included)

Income Items	For the Month of Nov.		For the Eleven Months of	
	1940	1939	1940	1939
1. Net railway operating income	\$71,327,820	\$70,414,612	\$601,039,365	\$52,847,772
2. Other income	15,006,907	17,078,555	135,276,047	128,489,693
3. Total income	86,334,727	87,493,167	736,315,412	656,337,465
4. Miscellaneous deductions from income	2,046,345	2,037,883	22,798,197	21,380,854
5. Income available for fixed charges	84,288,382	85,455,284	713,517,215	634,956,611
6. Fixed charges:				
6-01. Rent for leased roads and equipment	13,329,501	11,319,210	131,718,386	129,313,341
6-02. Interest deductions ¹	38,073,282	38,982,367	420,321,553	424,589,368
6-03. Other deductions	124,421	131,664	1,377,231	1,458,961
6-04. Total fixed charges	51,527,204	50,433,241	553,417,170	555,361,670
7. Income after fixed charges	32,761,178	35,022,043	160,100,045	79,594,941
8. Contingent charges	1,951,841	1,961,169	21,582,530	21,578,241
9. Net income	30,809,337	33,060,874	138,517,515	58,016,700
10. Depreciation (Way and structures and equipment)	17,147,636	16,728,761	188,319,776	185,161,317
11. Federal income taxes	5,433,797	4,297,926	54,888,956	30,110,279
12. Dividend appropriations:				
12-01. On common stock	28,829,255	34,378,258	96,642,358	87,684,161
12-02. On preferred stock	6,909,890	4,097,839	22,402,041	18,514,703
Ratio of income to fixed charges (item 5 ÷ 6-04)	1.64	1.69	1.29	1.14

All Class I Railways

Selected Asset and Liability Items ²	Balance at End of November	
	1940	1939
13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, account 707)	\$570,388,166	\$625,554,518
14. Cash	677,214,482	602,439,561
15. Demand loans and deposits	43,907,270	27,957,796
16. Time drafts and deposits	27,300,887	29,875,826
17. Special deposits	94,171,009	77,575,197
18. Loans and bills receivable	3,422,256	2,873,016
19. Traffic and car-service balances receivable	67,559,429	68,819,939
20. Net balance receivable from agents and conductors	53,050,459	54,004,103
21. Miscellaneous accounts receivable	135,207,530	125,591,211
22. Materials and supplies	329,708,802	310,732,250
23. Interest and dividends receivable	30,109,972	28,811,933
24. Rents receivable	1,509,498	1,474,158
25. Other current assets	8,493,513	8,354,839
26. Total current assets (items 14 to 25)	\$1,471,655,107	\$1,338,509,829
27. Funded debt maturing within 6 months ³	93,052,305	188,194,390
28. Loans and bills payable ⁴	151,610,202	199,928,755
29. Traffic and car-service balances payable	87,155,037	88,068,881
30. Audited accounts and wages payable	259,471,031	259,746,621
31. Miscellaneous accounts payable	62,692,346	61,591,377
32. Interest matured unpaid	26,803,928	23,354,692
33. Dividends matured unpaid	1,506,047	1,522,027
34. Unmatured dividends declared	44,989,618	49,154,229
35. Unmatured interest accrued	92,094,983	94,925,396
36. Unmatured rents accrued	31,505,939	31,353,323
37. Other current liabilities	39,340,606	31,293,324
38. Total current liabilities (items 28 to 37)	797,169,737	840,938,625
39. Tax liability (account 771):		
39-01. U. S. Government taxes	95,768,766	71,698,618
39-02. Other than U. S. Government taxes	140,588,144	146,381,289

¹ Represents accruals, including the amount in default.

² 1939 figures for certain liability items have been revised, for comparative purposes, to conform with changes prescribed in the Uniform System of Accounts by Commission's order of December 6, 1939, effective January 1, 1940.

³ Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.

⁴ Includes obligations which mature not more than 2 years after date of issue.

NET INCOME OF LARGE STEAM RAILWAYS
(Switching and Terminal Companies Not Included)

Name of Railway	Net Income After Depreciation		Net Income Before Depreciation	
	For the Eleven Months of	1940	For the Eleven Months of	1940
Alton R. R.	\$1,737,629	* \$939,418	\$1,497,880	* \$703,688
Atchison, Topeka & Santa Fe Ry. System ⁴	9,300,805	6,534,450	20,304,952	17,380,149
Atlantic Coast Line R. R.	787,683	701,792	2,676,114	2,598,840
Baltimore & Ohio R. R.	4,495,005	* 1,354,273	11,140,493	5,220,129
Boston & Maine R. R.	1,681,973	389,906	3,009,979	1,788,577
Central of Georgia Ry. ²	* 1,957,162	* 2,448,405	* 1,176,789	* 1,668,462
General R. R. of New Jersey ³	3,080,281	* 2,413,803	* 1,828,011	* 1,128,500
Chesapeake & Ohio Ry.	30,760,487	24,928,876	38,502,909	32,484,647
Chicago & Eastern Illinois Ry. ²	* 1,201,990	* 1,132,443	* 646,113	* 578,738
Chicago & North Western Ry. ²	* 5,581,545	* 8,584,576	* 1,063,039	* 4,035,131
Chicago, Burlington & Quincy R. R.	3,135,303	2,607,924	8,012,464	7,381,202
Chicago Great Western R. R. ²	* 179,151	* 82,097	336,335	409,216
Chicago, Milwaukee, St. Paul & Pacific R. R. ²	8,876,712	* 14,099,884	* 3,395,259	* 8,792,973
Chicago, Rock Island & Pacific Ry. ²	* 5,687,886	* 7,781,959	* 1,865,592	* 4,024,016
Chicago, St. Paul, Minneapolis & Omaha Ry.	* 1,968,096	* 2,077,805	* 1,452,428	* 1,547,483
Delaware & Hudson R. R.	1,587,505	1,691,961	2,586,331	2,616,817
Delaware, Lackawanna & Western R. R.	* 216,015	* 559,124	2,041,956	1,669,999
Denver & Rio Grande Western R. R. ²	3,136,024	* 4,011,235	* 1,992,767	* 2,900,388
Elgin, Joliet & Eastern Ry.	3,030,571	2,058,068	3,989,519	2,928,291
Erie R. R. (including Chicago & Erie R. R.) ³	112,771	* 1,071,867	3,458,119	2,280,231
Grand Trunk Western R. R.	* 333,247	* 2,509,947	748,410	* 1,438,489
Great Northern Ry.	8,659,775	5,627,310	12,088,305	9,013,892
Illinois Central R. R.	* 503,238	1,566,814	5,333,012	7,535,694
Lehigh Valley R. R.	* 455,830	* 285,860	1,444,886	1,652,519
Long Island R. R.	* 1,057,126	1,500,060	19,778	* 422,183
Louisville & Nashville R. R.	7,823,582	6,430,764	11,815,494	10,405,141
Minneapolis, St. Paul & Sault Ste. Marie Ry. ²	* 3,909,333	* 5,000,695	* 2,784,796	* 3,883,989
Missouri-Kansas-Texas Lines	* 2,768,216	* 3,223,579	* 1,689,968	* 2,079,194
Missouri Pacific R. R. ²	* 10,242,432	* 12,501,145	* 6,124,652	* 8,494,530
New York Central R. R. ⁵	7,264,849	382,834	21,908,073	14,937,312
New York, Chicago & St. Louis R. R.	2,598,841	2,115,926	4,059,950	3,550,456
New York, New Haven & Hartford R. R. ²	* 2,686,977	* 3,224,426	358,398	* 135,730
Norfolk & Western Ry.	29,555,771	27,911,638	35,286,724	32,554,839
Northern Pacific Ry.	* 449,650	* 3,428,720	2,665,252	* 333,242
Pennsylvania R. R.	38,983,305	26,901,098	64,085,559	51,349,732
Pere Marquette Ry.	1,012,040	176,267	3,083,791	2,331,807
Pittsburgh & Lake Erie R. R.	4,413,369	3,769,436	6,450,434	4,824,676
Reading Co.	5,395,426	4,208,256	8,187,297	7,061,437
St. Louis-San Francisco Ry. ²	* 7,054,236	* 8,217,317	* 4,262,679	* 5,410,807
St. Louis, San Francisco & Texas Ry.	* 254,565	* 207,028	* 254,426	* 206,265
St. Louis Southwestern Lines ²	* 335,557	* 1,898,209	249,943	* 1,330,162
Seaboard Air Line Ry. ¹	* 5,256,337	* 5,736,513	* 3,097,276	* 3,759,456
Southern Ry.	4,721,547	3,826,613	7,956,783	7,023,512
Southern Pacific Transportation System ⁶	6,344,384	5,017,652	13,599,992	12,188,577
Texas & Pacific Ry.	1,364,091	809,359	2,489,101	1,912,315
Union Pacific R. R. (including leased lines)	15,097,539	14,534,799	22,163,365	21,367,440
Wabash Ry. ¹	* 2,671,894	* 3,641,707	* 688,454	* 1,669,904
Yazoo & Mississippi Valley R. R. ....	.....	.....	470,759	453,661

¹ Deficit.² Report of receiver or receivers.³ Report of trustee or trustees.⁴ Under trusteeship, Erie R. R. only.⁵ Includes Atchison, Topeka & Santa Fe Ry., Gulf, Colorado & Santa Fe Ry., and Panhandle & Santa Fe Ry.⁶ Includes Boston & Albany, lessor to New York Central R. R.

⁶ Includes Southern Pacific Company, Texas & New Orleans R. R. and leased lines. The report contains the following information: "Figures reported above for Southern Pacific Transportation System exclude offsetting debits and credits for rent for leased roads and equipment, and bond interest, between companies included therein. Operations for 1940 of separately operated Solely Controlled Affiliated Companies (excluding results for Southern Pacific Railroad Company of Mexico), not included in above statement, resulted in a net deficit of \$325,432 for the month and \$4,477,141 for the period. These results include \$214,196 for the month and \$2,338,976 for the period, representing interest on bonds of such companies owned by Southern Pacific Company not taken into income by S. P. Co. and, therefore, not included in the 1940 income results for the System reported above. The combined results for 1940 for Southern Pacific Transportation System and separately operated Solely Controlled Affiliated Companies (excluding S. P. R. R. Co. of Mexico) amounted to a net income of \$2,586,469 for the month and \$4,206,219 for the period. Figures herein given exclude results of S. P. R. R. Co. of Mexico for the reason that policy was adopted January 1, 1940 of making no further advances to that company, it being required to conduct its operations entirely within its own resources."

\$211,731,824 as contrasted with \$153,253,282 for the same period last year.

Eighty-five roads reported net incomes for November, while 43 reported net deficits; in November, 1939, there were 79 net incomes and 49 net deficits. For this year's first 11 months 71 reported net incomes and 56 had net deficits, as compared, respectively, with 68 net incomes and 59 net deficits in the first 11 months of 1939.

The consolidated statement for all Class I roads and that showing net incomes or deficits of roads having annual operating incomes over \$25,000,000 are given in the accompanying tables.

Big New York Stations Have a Good Year

Passenger traffic through Grand Central and Pennsylvania stations in New York was good in 1940. Almost 40,000,000 persons passed through Grand Central as pas-

sengers during the year, an increase of 1,500,000 over 1939. The exact figures were: 39,805,952 in 1940 and 38,260,143 in 1939. Of the former the Central handled 21,649,109 and the New York, New Haven & Hartford, 18,156,843. Through passengers totaled 13,944,531, divided between the two roads as follows: New York Central, 4,239,842, an increase of 172,634 over 1939, and the New Haven, 9,704,689, an increase of 757,234. Suburban passengers totaled 25,861,421, an increase of 615,941 over 1939, divided between the two roads as follows: New York Central, 17,409,267, an increase of 525,006 over 1939, and the New Haven, 8,452,154, an increase of 90,935 over 1939.

The P. R. R. handled more passengers through Pennsylvania station in 1940 than any year during the life of the terminal. A total of 14,226,929 passengers were carried during the 12-month period, representing an increase of 638,953 over the best

previous year, 1939, when 13,587,976 were carried. The New Haven also handled a record number of passengers at the station—1,099,084—an increase of 133,490 over 1937, the best previous year, and 167,899 above the figure for 1939. During the same period the Long Island handled 49,446,381 inbound and outbound passengers at the Pennsylvania station, a decrease of 5,152,894 from 1939, its best year, reflecting the decline in attendance at the New York World's Fair during its second season. The Lehigh Valley handled 537,048 passengers on its trains to and from the station during 1940, a decrease of 7,326 from the previous year and a decrease of 96,207 from its best year, 1925.

Budd Satisfied With Handling of Export Freight

The February 4 issue of "Defense," official bulletin of the National Defense Advisory Commission, carried an article which stated that Transportation Commissioner Ralph Budd reported recently "that during 1940, increases in export movement through certain North Atlantic ports—as high as 100 per cent over 1939 levels and approximately equaling the 1918 peak—have been handled without congestion and without undue detention of loaded freight cars or overcrowding of terminal facilities."

The article goes on to point out how lessons have been learned from transportation difficulties experienced in World War I; and to credit the satisfactory present situation to the Association of American Railroads' port control plan. Under the present arrangement, Mr. Budd's office is furnished information twice weekly as to the number of cars on hand at the ports and as to average daily unloadings.

Dollar Value of U. S. Railway Equipment Exports Up in 1940

United States exports of railway equipment in 1940 reached the highest total in ten years, with shipments amounting to \$17,662,240, according to the Foreign Commerce Weekly, issued by the United States Department of Commerce. December exports of \$1,221,998 were the highest since 1937. A comparison of total shipments which includes locomotives and parts, rolling stock and parts and miscellaneous equipment, such as railway signals, car heating equipment, and air brake equipment, follows:

	12 Months	December
1940	\$17,662,240	\$1,221,998
1939	8,365,922	1,132,829
1938	14,027,755	502,720
1937	12,914,569	2,542,072
1936	7,296,648	786,352

Land-Grant Repeal Gives Roads More Mail Pay

Repeal of land-grant rates will give the railroads an increase of \$1,239,895 in mail pay for the current fiscal year and the estimated maximum annual increase of \$2,519,595 for the fiscal year ending June 30, 1942, and thereafter, according to William E. Triem, superintendent, Division of Railway Adjustments, Office of the Second Assistant Postmaster General. Mr. Triem's estimates were a part of his recent testimony at hearings before a sub-

Continued on next left-hand page

Finish Means More Than Eye Appeal...



... ON LIMA RODS

Careful finish of the entire surface of rods has more than eye appeal alone. It prevents the formation of incipient cracks that might develop into full fledged flaws. For this reason you will find that all running gear parts of Lima-built locomotives are of unusual high quality.

LIMA LOCOMOTIVE WORKS



INCORPORATED, LIMA, OHIO

committee of the House committee on appropriations on the Post Office Department Appropriation Bill for fiscal year 1942.

Mr. Triem explained that the land-grant railroads in the past have received 80 per cent of the normal mail-pay rates. He would not comment on the merits of repeal, but he did tell the sub-committee that "it would seem to be a bad bargain from the standpoint of the Post Office Department on account of increased expenditures." A table breaking down the aforementioned \$2,519,595 shows that the leading beneficiary will be the Atchison, Topeka & Santa Fe, receiving an annual increase in mail pay of \$477,706. Next in turn will be the Chicago, Burlington & Quincy, \$222,417; Illinois Central, \$204,756; Missouri Pacific, \$198,061; Chicago & North Western, \$134,697; Chicago, Milwaukee, St. Paul & Pacific, \$116,174; Great Northern, \$110,224. Estimated increases for other roads are under \$100,000.

1940 Crossing Accidents

Fatalities resulting from accidents at highway-railroad grade crossings in 1940 totaled 1,814, according to complete reports for the year received by the Safety Section of the Association of American Railroads. Except in 1937 when there were 1,875, the number of such fatalities was greater in 1940 than in any year since 1930.

The number of fatalities in 1940 was an increase of 416 compared with 1939 and an increase of 297 compared with 1938.

Persons injured in highway-grade crossing accidents in 1940 totaled 4,656, an increase of 657 compared with 1939, and an increase of 638 compared with 1938. In 1937, there were 5,136 persons injured in such accidents. "The increase," said D. H. Beatty, of Washington, D. C., chairman of the Safety Section of the Association of American Railroads and Superintendent of Safety of the Southern, "that took place in the number of fatalities due to grade crossing accidents in 1940 resulted largely from the fact that more trains and automobiles were in operation. Approximately eighty per cent of the grade crossing accidents involve motorists at crossings in the vicinity of their homes. Regardless of the familiarity motorists may have with such grade crossings, every vigilance should be exercised by them to make certain that no train is approaching before they try to cross railroad tracks. Due care in approaching and passing over grade crossings will save hundreds of lives annually."

Bills in Congress

Delegate Anthony J. Dimond, Democrat of Alaska, has introduced H. R. 3095 which would authorize an appropriation of \$25,000,000 to be spent under the direction of the President for the construction of a highway through Canada to Alaska.

H. R. 3107 and H. R. 3109 to liberalize the benefit provisions of the Railroad Retirement Act have been introduced by Representative Whelchel, Democrat of Georgia.

Senator Bulow, Democrat of South Dakota, has introduced S. 831 to "provide for the improvement and development of navigation, irrigation, and control of floods on the Missouri River and its tributaries,

for the purposes of national defense, and for other purposes." To carry out its purposes the bill would create a federal corporation to be known as the Dakota Valley Authority.

Representative Gregory, Democrat of Kentucky, has introduced H. R. 3182 to provide that the Tennessee Valley Authority shall pay for any relocation, construction or other work on railway and highway bridges required to be changed as a result of T. V. A. activities.

S. 815 and H. R. 3219, identical bills "to provide for a preliminary examination and survey of the Hackensack River, New Jersey, with a view to its improvement and development in the interest of national defense," have been introduced, respectively, by Senator Barbour and Representative Osmers, Republicans of New Jersey. Mr. Barbour has also introduced S. 814, which would authorize the construction of a canal across New Jersey, from Cape May Harbor to Delaware Bay, "in the interest of national defense."

Senator Wiley, Republican of Wisconsin, has introduced S. 834 to amend section 77 of the Bankruptcy Act to give personal-injury claims preferred status as operating expenses in railroad reorganization proceedings.

Representative Hinshaw, Republican of California, has introduced H. R. 3259 to provide that the Civil Aeronautics Authority shall be an independent establishment of the government. C. A. A., formerly independent, was transferred to the Department of Commerce by one of President Roosevelt's reorganization orders of last year.

North Shore Places "Electroliners" in Service

The Chicago, North Shore & Milwaukee placed two four-car, air-conditioned, streamlined electric trains, called "electroliners," in service between Chicago and Milwaukee, Wis., on February 9. The trains, built by the St. Louis Car Company, are the first all-electric articulated trains of their kind ever to be constructed, and are especially designed to meet the peculiar needs of a heavy traffic that moves every day between the metropolitan areas

of Chicago and Milwaukee. Each makes two and a half round trips daily over the Skokie Valley route.

These articulated trains are 155 ft. 4 in. long and weigh 200,000 lb. The four units are mounted on five trucks. The two end-units of each electroliner are luxury coaches, divided into two compartments by passageways which provide the only entrance and exit to the trains. These end-units seat 30 passengers in each of the coach sections and 10 passengers in the smoking compartments. A modern rest room is located in each of the smaller compartments.

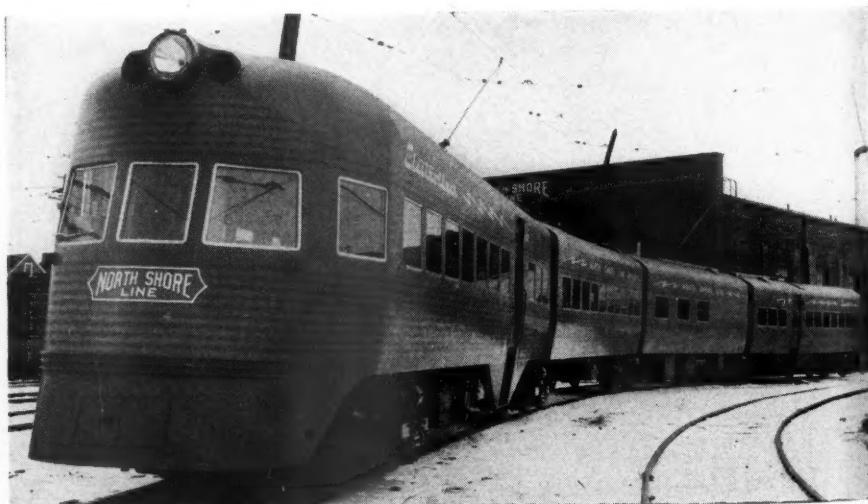
One of the center-units in each train is an all-coach compartment seating 40 passengers. The remaining center-unit is a tavern-lounge with a seating capacity of 26 passengers.

The interior color scheme of each car is different. One of the luxury coach units is furnished in coral, blue and silver. Coral upholstery is silhouetted against two tones of blue on the sides, with silver window shades and silver decorations above. The smoker section of this unit is in complete harmony but deeper in tones. The other luxury coach unit is finished in apricot, turquoise and brown. The smoking section is finished in similar harmonious colors but deeper tones. The full-coach unit has floors of soft pearl gray with black and red borders; walls in two shades of gray; and harmonizing gray upholstery.

In the tavern-lounge unit, deep red, brown and gold are used. Walls and the "snack bar" are natural walnut combined with cork and dull brass. Window shades are gold colored and a thick brown carpet covers the floor. Walls above the windows are decorated with murals.

Lighting fixtures in the coach-units are of the latest design beam-controlled lighting. A fixture is located over each seat and provides approximately 25 foot candles on the reading plane. Lighting in tavern-lounge units is of various types, arranged to illuminate highly the bar and immediate vicinity, with an artistic illumination of lower intensity throughout the remainder of the car.

The cars are constructed of high tensile steels, electrically welded. Articulated



Each Train Makes Two and One Half Round Trips Daily Between Chicago and Milwaukee, Wisc.

body end-sills are steel castings, with the center bearings and side bearings cast integral. Center bearings are of the ball-and-socket type, wherein the spherical-shaped center bearing of one unit rests in a socket attached to the adjacent unit and that, in turn, bears on the main center bearing attached to the truck bolster. Car side bearings rest on rollers attached to the truck bolster in order to provide minimum resistance to truck movements at track curves.

Trucks are of the cast-steel frame type with double equalizer bars and have a wheel base of 7 ft. 2 in. Large diameter coil springs with parallel shock absorbers prevent transmission of vibrations to car bodies. Conventional type elliptic springs at the truck bolster are eliminated.

Each electroliner is equipped with eight motors of 125 hp., or a total of 1,000 hp. per train. Two motors are mounted in each of the first two trucks at each end of the train. Drive between motors and axles is a departure from previous practice, in that the motor is rigidly attached to the truck frame and drives the axle through a flexible connection.

Community Offers to Maintain Railroad Station

Officials of the borough of Northvale, N. J., located on the Northern of New Jersey, have expressed willingness to negotiate with the railroad to arrange for the maintenance of its station located therein by the employees of, and at the sole expense of, the borough. This unusual offer was made at a recent hearing of the state Board of Public Utility Commissioners on a petition of the Erie (which at present operates the Northern of New Jersey) for permission to abandon and permanently retire the station building at Northvale.

In its petition, the Erie pointed out that passenger service consists of three passenger trains to Jersey City, N. J., in the morning and three passenger trains from Jersey City in the afternoon and evening. No mail, express or carload freight is handled from the station. The annual cost of operating the station is \$1,396, most of which will be saved if the application is approved. Both the Erie and the Northern are at present in bankruptcy proceedings.

In reply, the board permitted the Erie to discontinue the services of the agent at Northvale (and at two other stations for which a similar request was made) but denied the application to remove the building without prejudice to renewal in the event that the proposed negotiations between the railroad and representatives of the town are not satisfactorily concluded.

Scrap Prices Fixed

An agreement has been reached between railroads and the stabilization committee of the National Defense Council to the effect that scrap dealers may offer railroads up to \$21 per gross ton for No. 1 heavy melting steel at Pittsburgh during February without running the risk of having their bids rejected as "unduly high" according to notices which have been received by scrap dealers. This price com-

pares with \$22 obtained by the railroads in January. The stabilization committee has also prescribed a maximum of \$26 on rail for re-rolling and \$24 on scrap rails in the Pittsburgh district, an increase of \$1 per ton having been allowed on re-rolling rail to defray the cost to the railroads in sorting this scrap from other rail. While maxima were not prescribed in other districts, it is expected that these prices will be based on the same relative differences from the Pittsburgh base that prevailed previous to the price stabilization activities of the National Defense Council.

Forwarders and Truckers Agree on Forwarder-Bill Principles

The Freight Consolidators & Forwarders Institute has announced an agreement with American Trucking Associations, Inc., whereby those two organizations will recommend amendments to incorporate "certain principles" in S. 210, the pending forwarder regulation bill which was introduced recently by Senator Reed, Republican of Kansas, for himself and Chairman Wheeler of the Senate committee on interstate commerce. Provisions of the bill, which would deny forwarders the status of common carriers under the Interstate Commerce Act while placing under Interstate Commerce Commission regulation their relationships with their customers and the carriers, were reviewed in the *Railway Age* of January 11, page 147.

As set forth in the Institute's statement, the principles agreed to with A.T.A. are as follows: (1) To maintain the status quo of freight forwarders; (2) provide for elimination of abuses now prevalent in the forwarder method of transportation through various methods and devices for defeating the purposes for which regulation was intended; (3) permit (not mandatory) rail, water and motor carriers to concur in joint through rates of forwarders, with sufficient safeguards to insure against bartering as between competing carriers whose services are utilized; (4) provide the equivalent of a minimum rate order to insure against forwarder rates being the basis for rate wars between carriers by rail, water or motor; (5) certificates to show key points and territories served, extensions prohibited without I.C.C. authority; (6) dual operations prohibited after 18 months from the date of the Act unless found by the commission to be in the public interest.

"Representatives of the forwarding industry have also consulted with a number of representatives of the rail carriers regarding the principles herein set forth," the Institute statement said.

Chairman Lea of the House committee on interstate and foreign commerce said this week that he is working on a forwarder regulation bill which he expects to introduce in the House.

Increasing Demand for 50-ft. End-Door Box Cars

Because requirements for 50-ft. end-door box cars for loading government trucks at the Pontiac, Mich., plant of the Yellow Coach & Truck Manufacturing Company

will "mount perceptibly" beginning with the last week of this month, L. M. Betts, manager of the Car Service Division's Closed Car Section, has called upon all railroads to extend their "unstinted cooperation" in connection with the Grand Trunk Western's efforts to meet the demand.

The schedule, indicating what Mr. Betts says are car requirements "of no mean proportions," calls for the loading of 73 cars daily during the week of February 24; for the week of March 3 it will be stepped up to 100 cars a day while the rate during the weeks of March 10 and 17 will be 120 cars daily. Similar schedules will thereafter continue in effect through August.

Mr. Betts' appeal calls attention to the fact that there are 3,251 box cars eligible for this loading; and "based on turnaround time heretofore obtained, it will require a minimum of half this ownership to protect the above loading demands alone, provided all cars used in the service are returned empty in home route to the G. T. W." Connections of the G. T. W. are notified that they may expect calls for daily delivery of the cars involved. Meanwhile, the G. T. W. will endeavor to carry a bank of empty cars sufficient to guard against the hazard of fluctuations in daily deliveries"; but connecting lines are asked to appraise their ability to maintain the delivery rate scheduled, and to call upon their connections for cooperation.

The situation, Mr. Betts went on, will require "rigid enforcement" of Special Car Order No. 42 which was issued sometime ago to expedite the return of these cars to the G. T. W. Moreover, in addition to the loading from Pontiac, Mr. Betts called attention to other movements of government materials requiring the same size of car. At Chicago, the Diamond T Motor Company is loading 10 to 12 carloads daily of government trucks. He pointed out that Special Order 42 applies "in equal force" in connection with that movement.

Chamber of Commerce Report Favors Consolidations

After asserting that the labor-protection provisions relative to consolidations in the Transportation Act of 1940, while restrictive, should not deter railroad consolidations, the Transportation and Communication Department Committee of the Chamber of Commerce of the United States, urges, in its recent report on Railroad Consolidation, that the carriers "have both the need and the opportunity now as never before to streamline their plant, cut away unnecessary trackage and service, and establish a practical working base on which they can hope to utilize their inherent advantages and earn a fair return under fair regulation of all competing forms of transportation."

The report, noted briefly in last week's issue, is a document of about five pages, outlining the history of consolidations of railroads and giving the merger provisions in the 1920 Act and the changes made in the Transportation Act of 1940. The committee feels that consolidation should facilitate abandonment of branch lines which are no longer profitable. It goes on to say that perhaps because of the difficulty of persuading the Interstate Commerce

ANNOUNCE

THE
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INCING

THE Franklin System of Steam Distribution was disclosed to railroad men at the Atlantic City Convention in 1937.

Pursuant to the statement made at that time that this was under test development, the Franklin Company built a complete Steam Distribution System which was subjected to extensive laboratory tests on a test plant especially constructed for the purpose. This unit was operated twenty-four hours a day for the equivalent of 155,000 miles at an operating speed of eighty (80) miles per hour.

From time to time changes in details were made in the design. After the tests were completed, a second unit was built and operated on the test plant under similar conditions, for a total of 35,000 miles.

This unit was then applied to one of The

Pennsylvania Railroad high-speed Pacific type passenger locomotives, and after a few weeks' service was subjected to extensive dynamometer tests in road service by the Railroad.

The locomotive was then operated in regular pool service on high-speed runs and after a year's service, and through the courtesy of The Pennsylvania Railroad, it was placed on the Pennsylvania test plant at Altoona and subjected to further exhaustive tests at speeds up to one hundred (100) miles per hour.

The results from this research program are so gratifying that the Franklin System of Steam Distribution is now offered to the railroads as a marked advance in the development of the steam locomotive.

Y COMPANY, INC.

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Commission to authorize abandonments in the face of opposition from communities and industries which make little use of rail lines but are unwilling to see them torn up, the railroads continue under the burden of thousands of miles of branch lines that have no prospect of paying their way either directly or because of the traffic they contribute to the whole system. It concludes that the earnings of main lines are thus frequently more than eaten up by the losses of the branches.

"If, however," continues the report, "a large railroad were willing to buy a smaller one in order to secure its superior main stem between important centers, but unwilling to take on a burden of unprofitable branch lines, this should stimulate getting rid of the branch lines of the smaller road. In short, future consolidation negotiations between railroads will presumably take account of only the useful lines and assume elimination of others."

November Bus Revenues 11.1 Per Cent Above 1939

Class I motor carriers of passengers reported November, 1940, revenues of \$9,430,054 as compared with \$8,487,772 in November, 1939, an increase of 11.1 per cent, according to the latest compilation pre-

ference is called a dramatic presentation of the thought that the seaway "long defended as a great improvement to facilitate normal trade relations, is even more important in times of emergency."

Previously Dr. Danielian's letter of transmittal had said that the historical study "indicates that the overwhelming weight of opinion, based on evidence gathered during the course of 45 years, has been in favor of proceeding with the construction of the St. Lawrence seaway and power project." Only two "serious studies in opposition" were found, one issued in 1928 by the Brookings Institution, and one prepared in the spring of 1940 by the Niagara Frontier Planning Board. "These," Dr. Danielian promised, "will be examined exhaustively in other reports of the St. Lawrence Survey."

The forthcoming reports will be entitled: Shipping Services on the St. Lawrence River; Potential Traffic on the St. Lawrence Seaway; The Effect of the St. Lawrence Seaway Upon Existing Harbors; The St. Lawrence Seaway and Future Transportation Requirements; The Economic Effects of the St. Lawrence Power Project; Summary Report of the St. Lawrence Survey.

Meanwhile extensions-of-remarks on the

his head, but he has no intention of doing so. The St. Lawrence question, Mr. Roosevelt went on, is something for Congress to decide; he added that he was unable to say when he might again request Congress to take it up.

December Accident Statistics

The Interstate Commerce Commission on February 7 made public its Bureau of Statistics' preliminary summary of steam railway accidents for December and the 12 months of 1940. The tabulation, which is subject to revision, follows:

Item	Month of December		12 months ended with December	
	1940	1939	1940	1939
Number of train accidents	729	580	7,106	6,074
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	150	129	2,045	2,294
Injured	141	124	2,056	2,290
Passengers on trains:				
(a) In train accidents*				
Killed .....	...	...	66	13
Injured	47	104	863	776
(b) In train-service accidents				
Killed	2	3	9	14
Injured	146	164	1,663	1,727
Travelers not on trains:				
Killed	3	3	7	13
Injured	72	72	813	817
Employees on duty:				
Killed	52	37	536	499
Injured	1,647	1,540	17,890	16,954
All other nonresidents:				
Passers:**				
Killed	229	173	1,974	1,529
Injured	750	664	6,281	5,555
Total—All classes of persons:				
Killed	436	345	4,637	4,362
Injured	2,803	2,668	29,566	28,119

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than \$150 to railway property.

** Casualties to "Other nonresidents" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nonresidents, were as follows:

Killed

224 162 1,814 1,398

Injured

616 534 4,656 3,999

pared by the Interstate Commerce Commission's Bureau of Statistics from 144 reports representing 145 bus operators. Passengers carried increased 17.2 per cent, from 11,560,546 to 13,549,571.

The breakdown by regions of the bus revenue and traffic figures, which exclude data on charter or special party service, is given in the accompanying table.

First of Seven Reports on St. Lawrence Project

The first of a series of seven reports on the economic aspects of the St. Lawrence waterway and power project, which are being prepared in the Department of Commerce at the request of President Roosevelt, was made public this week by Acting Secretary of Commerce Wayne C. Taylor. It is a 39-page document dealing with the "History of the St. Lawrence Project," and it was prepared under the direction of Dr. R. N. Danielian, director of the St. Lawrence Survey, which has been underway for about a year.

Among other things the report outlines briefly the various governmental and other surveys of the St. Lawrence which have been issued from time to time; also, the negotiations and treaty-making efforts of the United States and Canada, and finally the current revival of the project as a "national defense" need. In the latter connection, President Roosevelt's December 6 message to the St. Lawrence Seaway Con-

St. Lawrence have continued to turn up in the Congressional Record. In the February 5 issue Representative Bender, Republican of Ohio, put in a statement in favor of the project which had been issued by G. B. Sowers, chairman of the Cleveland (Ohio) Port and Harbor Commission. On the following day Representative Schwert, Democrat of New York, inserted resolutions in opposition which had been adopted by the Board of Supervisors of Erie County, N. Y., and the Common Council of the City of Buffalo, N. Y.

In the Record for February 11 Representative Beiter, Democrat of New York, inserted an article in opposition which had appeared in the January issue of Labor Record, New Orleans organ of the American Federation of Labor; while Mr. Bender inserted an opposition statement from Walter I. Beam, vice president of the Cleveland Chamber of Commerce.

At his February 11 press conference President Roosevelt assigned to the standing-on-my-head category a question as to whether he could proceed with the St. Lawrence project under the powers proposed to be granted him in the pending lease-lend bill. The standing-on-my-head category was created by the President sometime ago for speculative questions on what he might do if the lease-lend bill were passed; he has said that the pending bill did not prohibit him from standing on

Roosevelt Takes Sides in Southeast Pipe-Line Controversy

Publication last week of a letter sent on January 23 to Chairman Lea of the House committee on interstate and foreign commerce revealed that President Roosevelt has interested himself in the current controversy in connection with proposed new pipe-line construction in the Southeast. The railroads and organized railroad labor have opposed the extension of pipe lines in that area, their opposition running specifically to the projected gasoline line from Port St. Joe, Fla., through Georgia to Chattanooga, Tenn.

Stating that it was "in the interest of national defense" to augment carrier facilities for petroleum in the Southeastern area, the President went on to say that he had been informed that pipe-line projects there "have been delayed by opposition from other carriers in interstate commerce." The Chief Executive then proceeded to express the hope that the matter would be taken up by the House committee's sub-committee on oil regulation—if it is not settled by the time that sub-committee resumes its investigations.

Chairman Lea in a statement issued



BRIDGE OF SIGHES

VENICE

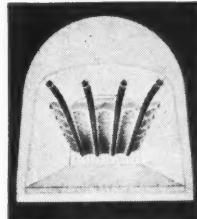
One of the most famous bridges of the world is the Bridge of Sighs which is the connecting passage between the ducal palace of Venice and the state prisons on the opposite side of the narrow canal on the east of the Rio del Palazzo. This bridge, which was completed in 1605, was designed by the same architect who designed the Rialto Bridge in Venice.

32 years ago the Security Sectional Arch was introduced to the railroads by the American Arch Company. While it has been improved to keep pace with modern railroading, the basic design remains the same and today it is the standard on American Railroads. To realize true efficiency from your Sectional Arch be sure that you maintain a complete arch at all times.

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February 6 said that he had assured the President that the sub-committee "will give proper consideration to the problem." Meanwhile Mr. Lea has "requested information about the President's request from both sides to the controversy" for the benefit of the sub-committee which is headed by Representative Cole, Democrat of Maryland. "The committee," Mr. Lea continued, "will go into the facts with a view of determining whether or not there is or should be a legislative remedy provided to meet the situation suggested by the President. . . ."

On January 11, Mr. Lea issued a second statement pointing out that the federal government could pass legislation to extend condemnation rights to interstate pipe lines, but expressing the view that such legislation would perhaps also require the pipe lines to make a showing of public convenience and necessity before a federal regulatory body. Among other things he said: "I take it as improbable that the federal government would grant the legal right to the construction of interstate pipe lines without giving some regulatory federal agency the right to decide whether or not the circumstances showed a need and justification from the standpoint of public interest for such lines. Due consideration will be given to the question of need from the standpoint of national defense and would, of course, be a proper matter for consideration by a regulatory body in deciding whether a certificate should be granted."

A. R. E. A. Convention Program

The forty-second annual convention of the American Railway Engineering Association will be held at the Palmer House, Chicago, on March 11-13. A feature of this convention will be the annual luncheon on Wednesday noon, March 12, which will be addressed by C. E. Denney, president, Northern Pacific.

In addition to the reports of standing and special committees, H. F. Moore, research professor of engineering materials, University of Illinois, will report on the joint investigations being made of continuous welded rails and fissures in rails, and W. B. Leaf, research technician of the Denver & Rio Grande Western, will present a paper on photo-elastic studies of stresses in rail joint bars. The convention will adjourn at 4 o'clock on Tuesday afternoon to permit members to attend the exhibit of the National Railway Appliances Association at the International Amphitheatre.

The program of the convention follows:

TUESDAY MORNING, 9:45 A. M.

Convention opens
Address by Acting President F. L. C. Bond, vice-president and general manager, Central region, C. N. R.

Reports of the secretary and the treasurer
Memorial tribute to President George S. Fanning, by E. M. Hastings, chief engineer, R. F. & P.
Address by C. H. Buford, vice-president, operations and maintenance department, A. A. R.

Reports of standing committees on:

Standardization

Signals and Interlocking

Electricity

Economics of Railway Location and Operation

TUESDAY AFTERNOON, 2:00 P. M.

Reports of standing committees on:
Waterways and Harbors
Highways
Cooperative Relations with Universities

Uniform General Contract Forms Water Service, Fire Protection and Sanitation

WEDNESDAY MORNING, 9:00 A. M.

Reports of standing committees on:
Economics of Railway Labor
Maintenance of Way Work Equipment
Wood Preservation
Roadway and Ballast
Track

Annual Luncheon—to be addressed by C. E. Denney, president, Northern Pacific

WEDNESDAY AFTERNOON, 2:30 P. M.

Reports of standing and special committees on:
Ties
Special—Stresses in Railroad Track
Rail
Report by Prof. H. F. Moore on the joint investigations being made of continuous welded rail and fissures in railroad rails
Paper by W. B. Leaf, research technician, D & R. G. W., on photo-elastic studies of stresses in rail joint bars

THURSDAY MORNING, 9:00 A. M.

Reports of standing and special committees on:
Buildings
Yards and Terminals
Records and Accounts
Rules and Organization
Iron and Steel Structures
Special—Impact

THURSDAY AFTERNOON, 2:00 P. M.

Reports of standing and special committees on:
Masonry
Wood Bridges and Trestles
Special—Waterproofing of Railway Structures
Closing business

Strike Ballot on Demand for Vacations With Pay

Organized railroad employees, other than those in train and engine service, will receive ballots on or about February 15 to vote on the question of striking to enforce their pending demand for two weeks vacation with pay. The decision to send out the strike ballots was announced in Washington, D. C., on February 6 by George M. Harrison, president of the Brotherhood of Railway Clerks, who had been to the White House earlier on that day to discuss the controversy with President Roosevelt.

Mr. Harrison has been chosen to lead the fight which involves his organization and 13 other non-operating unions. Aside from the five transportation brotherhoods, which are understood to be planning a separate drive, the organizations not involved are the American Train Dispatchers' Association, whose members already have vacations with pay, and the Order of Sleeping Car Conductors. Thus the participating organizations are: Order of Railroad Telegraphers; International Association of Machinists; International Brotherhood of Boiler Makers, Iron Ship Builders and Helpers of America; International Brotherhood of Blacksmiths, Drop Forgers and Helpers; Sheet Metal Workers' International Association; International Brotherhood of Electrical Workers; Brotherhood of Railway Carmen of America; International Brotherhood of Firemen and Oilers; Brotherhood of Railway & Steamship Clerks, Freight Handlers, Express and Station Employees; Brotherhood of Maintenance of Way Employees; Brotherhood of Railroad Signalmen of America; National Organization, Masters, Mates and Pilots of America; National Marine Engineers Beneficial Association; International Longshoremen's Association.

Mr. Harrison stated that approximately 750,000 employees would receive the strike ballots. The demand is for two weeks vacation with pay for all regular employees and one day for each month worked for other workers. The decision to call for

the strike vote came about as a result of the railroads' refusal to agree to national handling of the demand. Commenting on his visit to the White House, Mr. Harrison said that he had laid the whole situation before the President, expressing "our regret over the necessity for pursuing the case in this manner in view of the defense situation"; but "there is no other course." The Clerks' president would not discuss Mr. Roosevelt's reaction, but it is understood that the President expressed hope that management and labor might get together for conferences. Also there were indications that the President had authorized Mr. Harrison to tell J. J. Pelley, president of the Association of American Railroads, of the White House hope that such conferences could be arranged. In any event Mr. Harrison is understood to have contacted Mr. Pelley on the 7th, the A. A. R. president having been out of town on the 6th. No statement has been made by Mr. Pelley, inquiry at the A. A. R. bringing a reminder that the Association does not handle labor matters.

Meanwhile the story which Mr. Harrison told reporters when he made his strike-vote announcement recalled how the original notices of the vacation demand were served on the individual railroads in May, 1940, with a request that the matter be handled in a national conference. In that latter connection the union chief said that he had contacted Mr. Pelley, who reported that the A. A. R. board of directors would not be disposed to get into the case. Here Mr. Harrison inserted a footnote to call attention to the fact that the railroads have on several occasions agreed to national conferences where a union proposal has created a "concurrent situation" throughout the country.

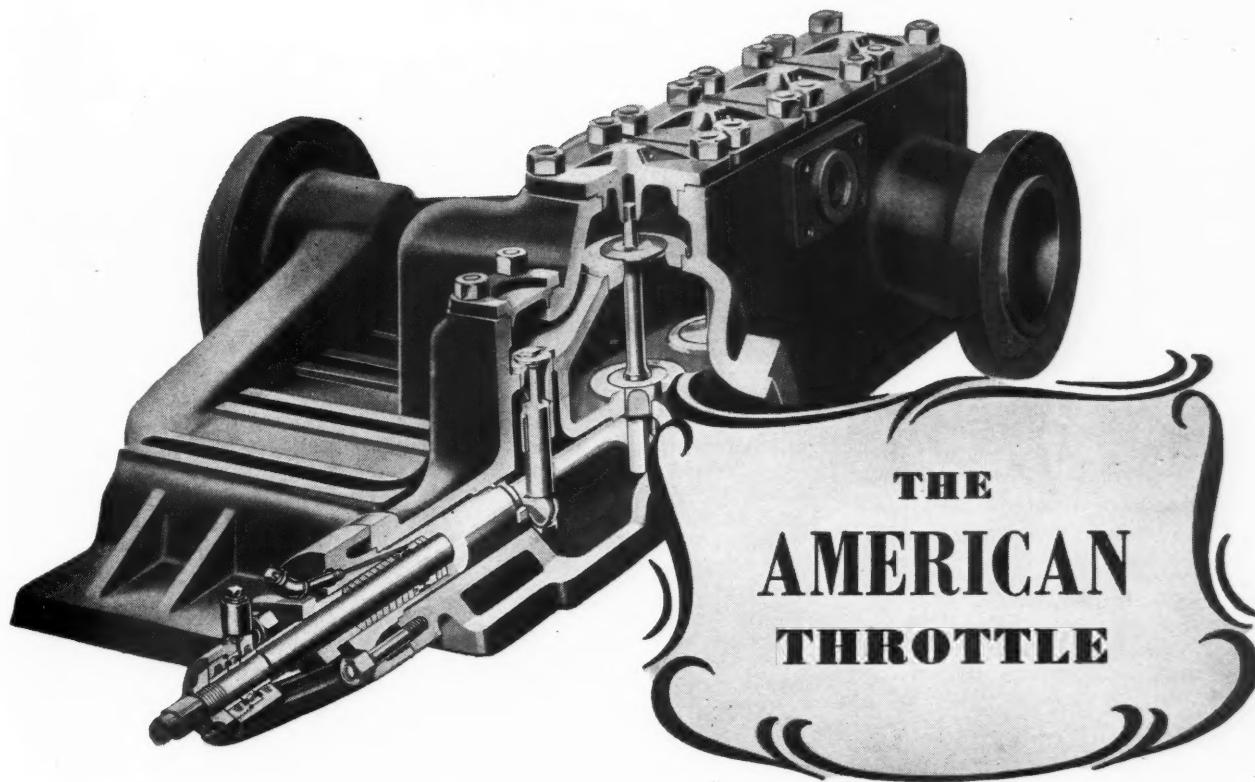
Labor's next move, Mr. Harrison went on, was a turn to the National Mediation Board with a request for mediation of the national-conference request. Upon inquiry to the railroads, that Board, as the labor chief put it, was confronted with objections to a national conference—the impasse "forcing us to submit the dispute on a strike ballot to bring about disposition of the controversy."

As noted at the outset, the strike ballots are expected to be in the hands of the men by February 15, and the men will be given 30 days in which to vote. Thus the counting of the ballots will come shortly after March 15, to be followed by the setting of a date for the strike if the vote goes that way. As is usual in union referendums, the voter must sign his ballot. Mr. Harrison indicated that, if the vote favored a strike, he expected the case to go to an emergency board appointed by the President. Such a Board would have 30 days to make its report, and the law requires that the status quo be maintained for 30 days after the making of such report.

No estimate as to the cost of meeting the present demand has been forthcoming from the management side. Mr. Harrison put the cost at about \$38,000,000 a year. Meanwhile there is another angle to the controversy, i. e., the outstanding notice from the Western railroads of their intention to reduce by 10 per cent the wages

★ ★

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successively, give an absolute control of the steam flowing to the cylinders.

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of the employees involved unless the vacation demand is withdrawn. Mr. Harrison indicated that he does not feel greatly concerned over that wage-cut notice. Bearing on labor's effort to arrange national conferences is the National Mediation Board's recent ruling in another case that it is not authorized under the law to require national or regional handling of disputes on the part of either the carriers or their employees.

Pennroad Trial Opens

Trial in two stockholders' suits, charging present and former officers of Pennroad Corporation with losses of \$95,500,000 of funds through mismanagement, opened in the United States District Court at Philadelphia, Pa., on February 10. Among the defendants are H. H. Lee, president of Pennroad; A. J. County, former Pennroad director and retired vice-president (finance and corporate relations), Pennsylvania; Joseph Wayne, Jr., director of both corporations; and the estates of the late W. W. Atterbury, former P. R. R. president, and E. B. Morris, P. R. R. director.

In his opening statement to the court Robert T. McCracken, counsel for the Pennsylvania (which is the chief defendant named in the suit) accused the plaintiffs of neglect in waiting ten years after the acts complained of to bring the suit. He also argued that Pennroad had been organized to make a profit on its investments and to direct funds into the transportation enterprises and purchases which would seek to head off aggressions against the interests of the stockholders of the Pennsylvania railroad. Said he: "The short answer to the plaintiffs case is that it rests upon no known or recognized principle of law; that it finds support neither in precedent, principle, common sense nor common justice and that in substance what they are asking this court to do is to hold that they are entitled to recovery simply because investments which seemed to be profitable and advantageous at the time when they were made and which would have been profitable and advantageous in any normal period of economic history, have, along with all the other investments of the country, suffered a great decline in values as a result of economic catastrophes of the early 1930's.

"In this connection, it may be said at the outset that it will be proved by the evidence that the holders of Pennroad securities have suffered a far less considerable drop in the value of those securities than many who invested in what were regarded as some of the soundest and most profitable enterprises at the same time."

No Railroads—No Fish!, Say Irish Citizens

A small Irish railroad recently abandoned most of its railroad operations and substituted buses and trucks therefor on its own account. The latter did not fill the bill apparently, however, for a recent joint meeting of parish councils in Kincasslagh, Burtonport and Annagry passed a resolution calling upon the government of Eire to keep the Londonderry & Lough Swilly railway in operation "at all costs," accord-

ing to an article in a recent issue of "Modern Transport." Citizens of these towns claimed that with the departure of the last train on the line from Burtonport on June 3 their hopes for revival of the fishing and granite industries in that section died. They added that without a railway the fishing industry can have no development.

The Londonderry & Lough Swilly abandoned an 18 mi. line in 1935 and in June of this year closed its 50 mi. line from Letterkenny to Burtonport. All that remains of the rail operations of the company is 31 mi. of line running out of Londonderry.

Truman Favors Competitive Bidding on Securities

Senator Truman, Democrat of Missouri and a member of the Senate interstate commerce subcommittee investigating railroad financial practices, appeared before the Securities and Exchange Commission's public hearing on competitive bidding on securities issues by public utility companies on February 6 and detailed some of his views on the subject insofar as it applies to railroads.

In the first place, Senator Truman does not believe that the so-called continuing banker relationship which comes from the negotiated flotation of securities is of any real value. He cited testimony from the subcommittee's record wherein a member of the firm of J. P. Morgan & Co. had testified that his company would have permitted the Missouri Pacific to go bankrupt for lack of \$1,500,000, if the road had been unable to put up the necessary collateral.

"If continuing banker relationship has advantages over competitive bidding, financial aid in time of crisis, even from so recognized a firm as J. P. Morgan & Co., which was then engaged in both private banking and underwriting, is not one of them," said the Senator.

Senator Truman did not take much stock in the other argument advanced by the advocates of negotiated loans to the effect that a continuing relationship between a railroad and a banking house permits it to receive much valuable advice on financial matters free of cost. In fact, said the Senator from Missouri, that advice is a purchasable commodity and the railroads have been forced to pay well for it instead of getting it gratis.

"As you know," said the Senator in summarizing, "the Interstate Commerce Commission has required competitive bidding for railroad equipment trust certificates since about 1926—in my opinion, successfully. The significant thing about our 23-volume record is that while it is replete with instances of financial abuses resulting from continuing banker relationships, I do not recall a single instance of such abuses in the case of the tens of millions of dollars of equipment trust certificates issued under competitive bidding. So far as this class of securities is concerned, the competitive-bidding requirement seems to have wiped out with one stroke the many types of abuse which, as our record abundantly illustrates, cluster about the traditional type of underwriting arrangements."

Supply Trade

Chicago Railway Equipment Company

The annual report of the Chicago Railway Equipment Company shows a profit of \$302,969 for the year ending December 31, 1940, as compared with \$243,680 during the previous year. Current assets at the end of the year amounted to \$1,232,791 and current liabilities to \$360,153.

George M. Hogan, dealer in railway supplies, Chicago, has moved his office to 327 South LaSalle street.

The Hulson Grate Company, Keokuk, Iowa, has opened a temporary demonstration office at 322 South Michigan avenue, Chicago.

The John W. Clarke Company, Chicago, has been appointed representative of the **Roller-Smith Company**, Bethlehem, Pa., following the death of E. E. Van Cleef.

The Koppers Company has consolidated the New York headquarters of its tar and chemical, its wood preserving and its gas and coke divisions and the Koppers Coal Company at 60 East Forty-second street.

Stewart McNaughton has been appointed special representative by the **Baldwin Locomotive Works** to act in an advisory capacity and to assist the vice-president in charge of sales and the general sales manager. Other new appointments of the Baldwin Locomotive Works include the following: **C. A. Campbell**, formerly foreign sales manager, has been made sales manager of the locomotive division. **C. G. Pinney**, formerly technical representative in South America, will succeed Mr. Campbell as foreign sales manager. **C. A. Bercaw** has been appointed sales manager for Diesel-electric locomotives and **H. L. Weinberg**, chief service engineer for Diesel-electric locomotives.

OBITUARY

Bert R. Hartwell, treasurer of the Teleweld Corporation, Chicago, died in that city on February 4, after a brief illness.

Thomas B. Baker, director of the traffic department of the E. I. du Pont de Nemours & Company, died February 5, at Wilmington, Del.

Frank C. Stowell, sales manager in New England for the American Fork & Hoe Co., with headquarters at Boston, Mass., died on February 1 at his home in Medford, Mass., a suburb of Boston. Mr. Stowell was born on January 27, 1863, at Quincy, Ill., and was educated at Harvard, graduating in 1887. Early in his business career Mr. Stowell served in the engineering and maintenance of way departments of the Boston & Maine, holding the positions of assistant engineer and roadmaster. From 1902 to 1927, he served with the Boston Elevated Railway as a roadmaster.

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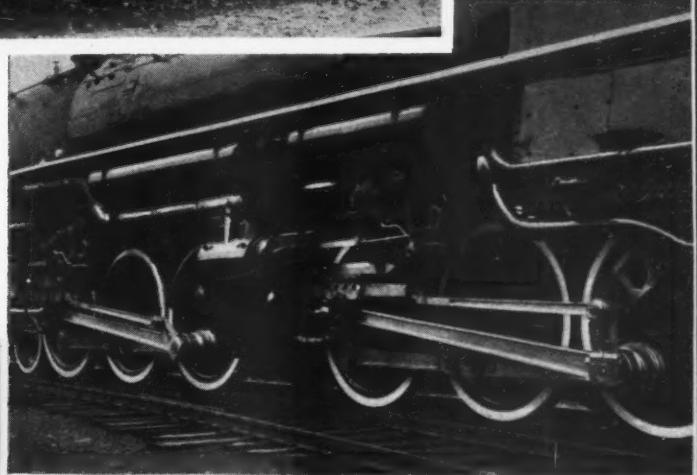
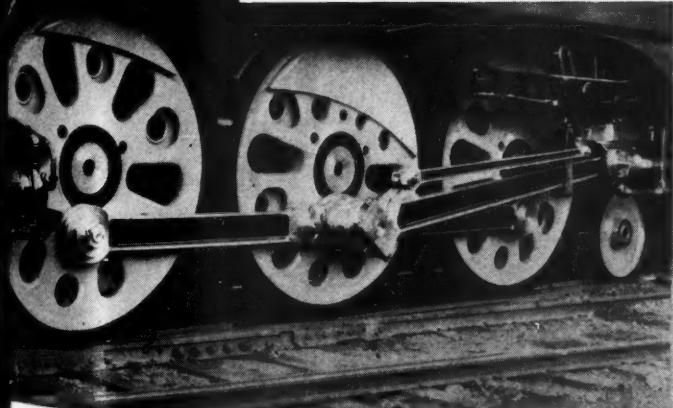
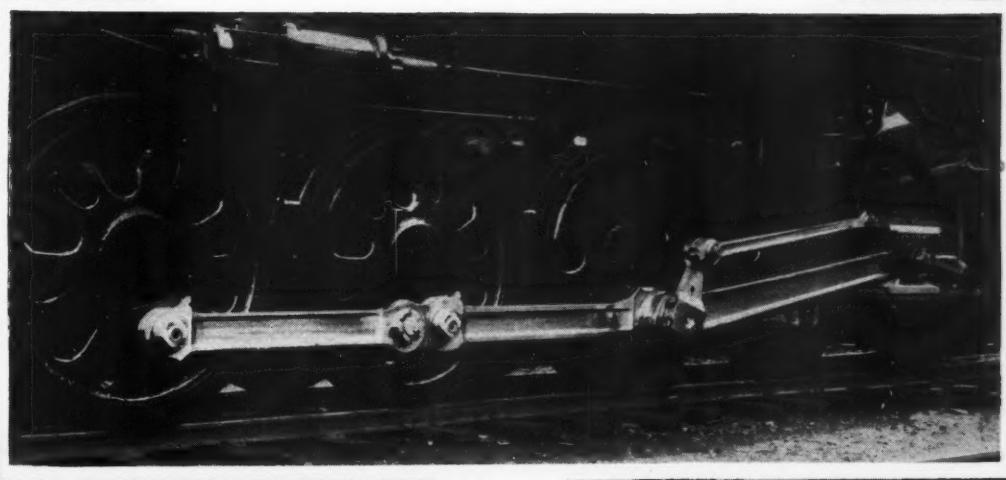
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AMERICAN LOCOMOTIVE COMPANY



At the end of this period he entered the railway supply field and subsequently became New England sales manager of the American Fork & Hoe Co.

R. N. Baker, assistant manager of the railway department of the Chicago office of the Okonite Company, died January 3 after a brief illness. He was 69 years old. Mr. Baker handled Okonite wires and cables among the railroads and public utilities for over three decades—in the early days as a representative of the Central Electric Company, Chicago, the company's former agent in the middle west, and later as one of the original members of the company's Chicago office, which was opened in 1925.

Harry W. Frost, president of the Frost Railway Supply Company, Detroit, Mich., died in Santa Barbara on February 8. He had been ill for several years with a heart ailment. Mr. Frost was born on February 22, 1860, in Felicity, Ohio,



Harry W. Frost

and in 1881 founded the Saturday Evening Lance in Topeka, Kan. In 1892 he became business manager of the *Railway Age* at Chicago, and in 1897 became associated with Berry Brothers, Ltd., at Detroit. He resigned from this company in 1905 to found the Frost Railway Supply Company, of which he remained president until his death.

Construction

MAINE CENTRAL.—The company's board of directors has approved sale of approximately four acres of the present freight yards at Bath, Me., to the Bath Iron Works Corporation. As a result of the sale, in order to provide proper facilities for conducting its freight and passenger business, the railroad will immediately begin a rearrangement of tracks which will eventually result in a relocation of its present passenger station or the construction of new station facilities. In either case, when the work is completed the passenger station will be in the same area as is the present station. Work of moving the tracks and rearranging the freight yards

is expected to take a considerable period of time to complete.

THE NEW YORK, NEW HAVEN & HARTFORD has authorized the construction of new passenger station and express facilities at Meriden, Conn., at a total estimated cost of \$75,000.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—Two bridges will be rebuilt with company forces in 1941. A three-span through truss bridge 360 ft. long will be replaced with six spans of deck plate girders, necessitating the construction of three additional piers. Seven spans of deck plate girders will be replaced with heavier girders on another bridge.

Equipment and Supplies

Rock Island to Spend \$7,797,058

The Chicago, Rock Island & Pacific was authorized by the federal district court on February 10 to spend \$7,797,058 for improvements during 1941. Of this amount, \$6,583,232 is for betterments to roadway and structures, \$844,576 is for improvements to equipment and \$369,250 is for the purchase of new rolling stock.

The budget for roadway and structures includes \$2,742,337 for rails, switches and track fastenings and makes provision for laying 35,000 tons of new rails and 23,900 tons of relay rails. It also includes \$436,020 for ballast and \$1,440,238 for bridge improvements.

Further installations of block signals, interlockers and other signal devices, as well as the installation of telephone dispatching circuits, are provided for in the program at a cost of \$429,034. Allowance is made for \$328,788 for improvements to shops and enginehouses and the installation of improved shop machinery and tools.

The equipment program includes the purchase of 10 Diesel-electric switching locomotives, 5 of 30 tons and 5 of 44 tons, the application of roller bearings to locomotives and the enlargement of tanks and tenders. Automobile loaders will be installed in freight cars and 25 caboose cars will be built in company shops. In addition, the budget provides for the purchase of two streamlined passenger cars for overflow Rocket train travel.

LOCOMOTIVES

THE GRAND TRUNK WESTERN is inquiring for twenty-five 4-8-4 type locomotives.

THE GREAT NORTHERN is rebuilding eight locomotives at its Hillyard, Wash., shops.

THE MAINE CENTRAL has purchased two Diesel-electric switching locomotives, one of 600 hp. from the American Locomotive Company for use at Bath, Me., and one of 380 hp. from the General Electric

Company for use at Augusta, Me. The intended immediate purchase of this equipment was reported in the *Railway Age* of January 25.

THE MINNESOTA TRANSFER RAILWAY expects to place orders this week for three 660-hp. Diesel-electric switching locomotives.

THE NEW YORK, NEW HAVEN & HARTFORD has ordered five electric freight locomotives from the Westinghouse Electric & Manufacturing Co.

THE CHESAPEAKE & OHIO has ordered eight 4-6-4 type locomotives from the Baldwin Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of February 1.

FREIGHT CARS

THE BESSEMER & LAKE ERIE has ordered five 90-ton hopper cars from the Pullman-Standard Car Manufacturing Company.

THE MCKEESPORT CONNECTING has ordered 100 70-ton low-side gondola cars from the American Car & Foundry Co.

THE NATIONAL TUBE COMPANY is inquiring for from 44 to 100 70-ton gondola cars.

THE ST. LOUIS REFRIGERATOR CAR COMPANY is building 35 light weight refrigerator cars in its own shops.

THE UNITED STATES WAR DEPARTMENT has ordered twenty 40-ton box cars from the Greenville Steel Car Company.

THE UNITED STATES NAVY DEPARTMENT has ordered 33 50-ton box cars from the Greenville Steel Car Company.

THE GRAND TRUNK WESTERN has ordered a total of 600 freight cars, placing 200 70-ton gondola cars with the Magor Car Corporation, 100 70-ton flat cars with the Greenville Steel Car Company and 300 40-ton automobile cars with the Press Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of January 25.

PASSENGER CARS

THE CHESAPEAKE & OHIO is reported to be in the market for 20 passenger-train coaches.

IRON AND STEEL

THE BANGOR & AROOSTOOK has placed an order for 1,633 tons of rail with the Bethlehem Steel Company.

MOTOR VEHICLES

THE BANGOR & AROOSTOK TRANSPORTATION COMPANY has ordered one 29-passenger, parlor-car type motor coach from the a. c. f. Motors Company.

THE NORFOLK SOUTHERN BUS COMPANY has ordered one 36-passenger, parlor-car type motor coach from the a. c. f. Motors Company.

Financial

BRIDGTON & HARRISON.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon as to interstate and foreign commerce its entire line extending from Bridgton Junction, Me., to Bridgton, 15.9 miles.

CENTRAL OF NEW JERSEY.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon the following lines:

1. From Bowentown Junction, N. J., to Greenwich Pier, 4.8 miles, and
2. A line of the Odgen Mine extending from Lake Hopatcong, N. J., to Edison, 10 miles.

CHESAPEAKE & OHIO.—*Bonds.*—This company has asked the Interstate Commerce Commission for authority to issue and sell \$24,800,000 of refunding and improvement mortgage bonds, series G-1 to G-25, carrying various interest rates and maturities. Details of the flotation were given in the financial columns of last week's issue.

CHICAGO & NORTH WESTERN.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Watersmeet, Mich., to Choate, 21.1 miles, and also a line from Watersmeet, Mich., to the end of the track, three miles.

DENVER & RIO GRANDE WESTERN.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon its so-called Santa Fe branch, a narrow-gage line, between Antonito, Colo., and Santa Fe, N. Mex., 125.3 miles.

DENVER & RIO GRANDE WESTERN.—*Control of the Denver & Salt Lake.*—The Interstate Commerce Commission, acting on its own motion, has reopened for further hearing Finance Docket No. 8070, the case in which this company was authorized to acquire control of the stock of the Denver & Salt Lake. Among the subjects listed as those on which new evidence will be developed are:

(1) Whether the price of \$155 a share which the D. & R. G. W. was authorized to pay for the stock of the Denver & Salt Lake was the bargain and sale price which the D. & R. G. W. had paid, or agreed to pay, for the stock and included no commissions or bonuses; and

(2) Whether the price of \$155 a share included undisclosed amounts for commissions or bonuses and was approved, and said condition (condition No. 1 in the commission's report) was imposed upon the D. & R. G. W. as a result of material misrepresentations and misleading statements of fact in the original application filed by the road, and in the testimony and evidence introduced at the hearings in the case.

It is understood that the case was reopened because of additional evidence which has come to the attention of the commission as a result of certain civil actions filed a year or so ago in New York

occurs in which depositions have been taken.

ERIE.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has asked the creditors and holders of securities of this company to vote on the acceptance or rejection of the final plan of reorganization under section 77 of the Bankruptcy Act which has been approved by the commission and the federal district court. All ballots must be returned to the commission by not later than April 12.

ILLINOIS CENTRAL.—*Abandonment by the Yazoo & Mississippi Valley.*—The Yazoo & Mississippi Valley has been authorized by Division 4 of the Interstate Commerce Commission to abandon its line extending from a point south of Greenville, Miss., to Riverside Junction, 35.8 miles, together with the Glen Allen branch extending from Hampton, Miss., to Glen Allen, two miles.

JERSEYVILLE & EASTERN.—*Operation.*—A certificate of convenience and necessity was granted this company on February 7 by the Illinois Commerce Commission to acquire and operate one-half mile of the line formerly operated by the Chicago, Springfield & St. Louis.

The newly organized railroad will perform switching and transfer service for six bulk oil stations, a coal yard, a grain elevator, a shoe factory, a bulk plant for handling orchard spray material, and a bulk plant for handling fuel oil.

LINVILLE RIVER.—*Abandonment.*—This company would be permitted to abandon its entire line extending from Cranberry, N. C., to Boone, 31.6 miles, if Division 4 of the Interstate Commerce Commission adopts a proposed report of its Examiner J. S. Prichard.

MISSOURI PACIFIC.—*Control of the Union Terminal and the St. Joseph Belt.*—Division 4 of the Interstate Commerce Commission has denied a petition of the Railway Labor Executives Association and the Brotherhood of Railway Clerks asking that the case wherein this company was recently authorized to acquire control of the Union Terminal and the St. Joseph Belt in St. Joseph, Mo. be reopened to reconsider the need for labor-protection provisions. It was the position of the brotherhoods that certain employees may be adversely affected by the merger and that the Transportation Act of 1940 make the imposition of such conditions mandatory by stating that the commission "shall" impose them in cases of mergers. No reason was assigned by the commission for its denial of the petition.

NEW YORK CENTRAL-PENNSYLVANIA-BALTIMORE & OHIO.—*Bonds of the Monongahela.*—The Monongahela has asked the Interstate Commerce Commission for authority to issue and sell \$11,418,000 of first mortgage 3 1/4 per cent bonds, series B, the proceeds to be used to redeem before May 1, 1941, at 105, a like amount of first mortgage four per cent bonds, series A. The bonds will be sold at 100.75 to Kuhn, Loeb & Co. and Morgan Stanley & Co., Inc. of New York City. The new bonds will mature February 1, 1966, and will be guaranteed by the Pittsburgh & Lake Erie, the

Pennsylvania and the Baltimore & Ohio, the proprietary roads.

NORTHERN PACIFIC.—*Equipment Trust Certificates.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$3,000,000 of 1 3/4 per cent serial equipment trust certificates, maturing in 10 equal annual installments of \$300,000 on February 15 in each of the years from 1942 to 1951, inclusive. The issue has been sold at 101.161 to the Equitable Life Assurance Society of the United States, making the average annual cost to the company approximately 1.54 per cent.

PRATTSBURGH.—*Abandonment.*—This company has decided to cease operations and has asked the Interstate Commerce Commission for authority to abandon its line extending from Prattsburgh, N. Y., to Kanona, 11.4 miles.

RICHMOND, FREDERICKSBURG & POTOMAC.—*Bond Issue.*—Stockholders of this road approved a \$6,500,000 refunding issue at a special meeting in Richmond, Va., on February 10. They authorized officers of the road to issue this principal amount of general mortgage bonds bearing 3 per cent interest, proceeds of which, together with other funds from the treasury, will be used to redeem all bonded indebtedness of the line, comprising \$4,000,000 of first mortgage 4s due June 1, 1943, and \$2,680,000 general mortgage 3 1/2s due April 1, 1943.

SOUTHERN PACIFIC.—*Abandonment.*—This company has asked the Interstate Commerce Commission for authority to abandon its Capay branch, extending from Esparto, Calif., to Capay, 2.4 miles.

SOUTHERN PACIFIC.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a part of its so-called Laguna branch extending from Colorado, Calif., to the end of the branch at Potholes, 11.7 miles.

WABASH.—*Reorganization.*—Director Oliver E. Sweet of the Interstate Commerce Commission's Bureau of Finance, has informed A. K. Atkinson, chief financial and accounting officer of this company, that its present plan of reorganization is unworkable. Mr. Sweet indicated that from available information it appeared to the commission that the plan did not have sufficient support from all classes of creditors and stockholders to warrant the belief that it could be consummated. He suggested to Mr. Atkinson that the consideration of the plan be concluded, but indicated that such action would not preclude the filing of a new plan which might be more agreeable to all the parties participating in the reorganization.

MOTOR TRUCK RATES on the Burma road are pretty steep. The Bureau of Foreign & Domestic Commerce quotes \$2.45 (Chinese National currency) as the charge on first-class freight per ton-kilometer. On this basis the cost of shipping one ton of gasoline from Anting on the Burmese-Chinese border to Kunming (Yunnanfu), a distance of 960 kilometers (595 mi.), would amount to \$2,361.60 (no exchange rate currently quoted).

NEW FACES



NEW RECORDS



ON DECEMBER 15th, 1938, the Seaboard inaugurated its famous "ORANGE BLOSSOM SPECIAL" luxury all-Pullman EMC 6000 hp. Diesel-powered trains to Miami, and followed immediately on February 2nd, 1939, with its also famous "SILVER METEOR" deluxe all-coach streamlined train. Success was immediate. Passenger revenues jumped month after month as a result of these new high standards of travel comfort, "on-time" arrivals, and faster schedules with maximum safety.

The record increase in passenger travel and passenger revenues has required continual expansion of this service so that today a fleet of 20 EMC 2000 hp. Diesel units is handling these modern trains between Washington, Miami, Tampa and St. Petersburg . . . further proof that

"PASSENGER SERVICE CAN BE PROFITABLE!"

ELECTRO-MOTIVE CORPORATION
SUBSIDIARY OF GENERAL MOTORS LA GRANGE, ILLINOIS, U. S. A.

Railway Officers

EXECUTIVE

Luther E. Hall has been appointed temporary receiver of the Louisiana Southern, with headquarters at New Orleans, La., to serve during the period when **Col. Henry B. Curtis**, president and receiver, is engaged in military service.

R. E. Hastings, president of the Union Terminal Railway and the St. Joseph Terminal Railway, with headquarters at St. Joseph, Mo., has been appointed also executive general agent on the Missouri Pacific at that point, a newly created position.

OPERATING

P. D. Dorman, agent at New Orleans, La., has been appointed executive general agent on the Gulf, Mobile & Ohio at that point, succeeding **S. A. Dobbs**, whose promotion to assistant vice-president, with headquarters at St. Louis, Mo., was announced in the *Railway Age* of January 18.

C. L. Grim, superintendent car service of the Lehigh Valley, with headquarters at Bethlehem, Pa., has been appointed superintendent transportation, effective February 1. Mr. Grim was born on September 28, 1884, at Bethlehem and entered railway service as a clerk on the Lehigh Valley at Bethlehem. He served successively as chief clerk to the superintendent at Auburn, N. Y., chief clerk to superintendent transportation at Bethlehem, special agent, assistant to superintendent transportation and superintendent car service, which latter position he held from June 3, 1930, until his recent appointment as superintendent transportation.

John H. Rigby, whose promotion to general manager of the Columbus & Greenville, with headquarters at Columbus, Miss., was announced in the *Railway Age* of February 8, was born at Anamosa, Iowa, on October 19, 1878, and entered railway service in October, 1900, as a laborer in a bridge gang on the Southern. In 1902 he was promoted to bridge foreman and in 1907 to supervisor of bridges and buildings at Knoxville, Tenn. In 1910 he was appointed assistant roadmaster at Knoxville and in the fall of 1917 he was promoted to roadmaster at Asheville, N. C. In 1918 he was promoted to general agent and in 1920 to superintendent of the Southern Railway in Mississippi (now the Columbus & Greenville), with headquarters at Columbus.

Raymond C. Thayer, whose promotion to superintendent of telegraph of the Great Northern, with headquarters at St. Paul, Minn., was announced in the *Railway Age* of February 1, was born in Minneapolis, Minn., on November 5, 1892, and studied mechanical engineering for three years at the University of Minnesota. In May, 1913, he became a shop foreman for the Hennepin Bridge Company, Minneapolis, and in March, 1916, he went with the Northwest-

ern Bell Telephone Company in that city as telephone engineer. Mr. Thayer entered railway service on October 1, 1917, as a draftsman in the telegraph department of the Great Northern at St. Paul and on February 18, 1919, he was promoted to telephone engineer. He was advanced to assistant superintendent of telegraph at St. Paul on June 16, 1936, the position he held until his recent promotion on February 1.

H. P. Lowry, trainmaster of the Cincinnati division of the Pennsylvania at Cincinnati, Ohio, has been appointed trainmaster-division operator of the Logansport division at Logansport, Ind., succeeding **E. G. Rohrbaugh**, who has been appointed trainmaster of the Cincinnati division, replacing Mr. Lowry. **A. L. Hunt**, assistant trainmaster of the Chicago Terminal division, has been promoted to trainmaster of the Toledo division, with headquarters at Toledo, Ohio.

TRAFFIC

P. C. Byrne, agricultural and industrial agent of the Alabama, Tennessee & Northern, with headquarters at Mobile, Ala., has retired.

The headquarters of **G. D. Nugent**, general agent, passenger department, for the Canadian National at St. Paul, Minn., have been transferred to Minneapolis, Minn.

R. C. Stubbs, whose promotion to assistant traffic manager of the Chicago & North Western, with headquarters at Chicago, was announced in the *Railway Age* of February 8, was born at Morrow, Ohio, on December 31, 1904, and entered railway service in the traffic department of the North Western at Cincinnati, Ohio, on May 15, 1925. He later worked as chief



R. C. Stubbs

clerk to the general agent at Philadelphia, Pa., and chief clerk to the assistant freight and passenger traffic manager at Chicago. In 1938 he was promoted to division freight agent at Chicago and on February 1, 1940, he was advanced to assistant general freight agent. His appointment as assistant traffic manager was effective February 1.

George C. Clegg, whose promotion to eastern traffic manager of the Denver & Rio Grande Western, with headquarters at Chicago, was announced in the *Railway*

Age of February 1, was born in Chicago on May 15, 1892, and entered railway service in 1908 as an office boy in the general office of the Chicago, Burlington & Quincy,



George C. Clegg

later advancing through various positions in that office and the city ticket office at Chicago. In 1914 he was promoted to city passenger agent and on January 1, 1916, he went with the D. & R. G. W. as city passenger agent. Mr. Clegg then served successively as traveling passenger agent and traveling freight agent, and on December 1, 1933, he was promoted to general agent at Detroit, Mich., the position he held until his recent promotion effective February 1.

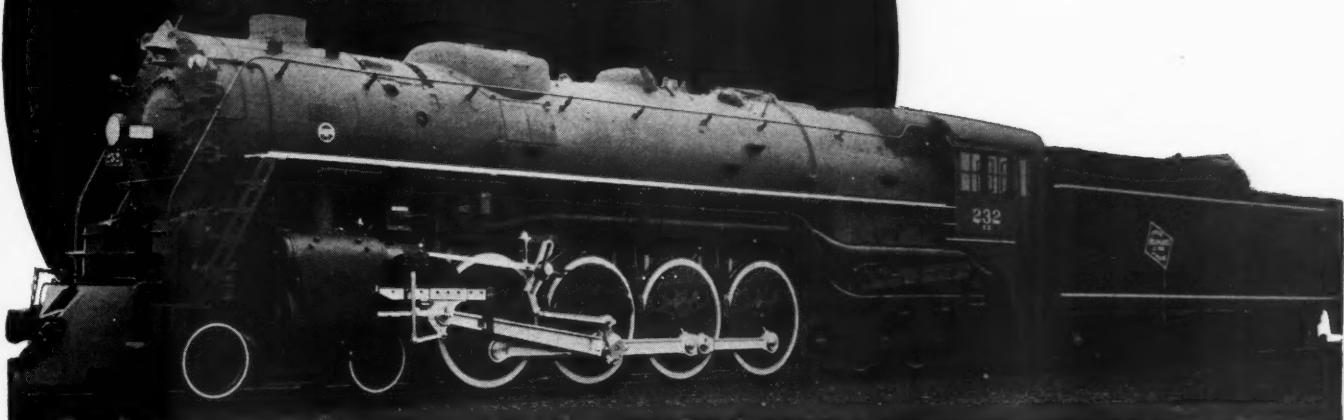
W. E. Barrett, district freight agent for the Gulf, Mobile & Ohio at Pittsburgh, Pa., has been promoted to district freight traffic manager at that point, succeeding **H. N. Crook**, who has been appointed division freight traffic manager at Memphis, Tenn.

L. H. Doty, assistant general freight agent on the Akron, Canton & Youngstown, has been promoted to general freight agent, with headquarters as before at Akron, Ohio, a change of title. **John Y. Cassell**, assistant general freight agent at Kansas City, Mo., has been transferred to St. Louis, Mo., a change of headquarters.

Albert O. Olson, whose promotion to general freight agent on the Chicago & North Western, with headquarters at Chicago, was announced in the *Railway Age* of February 8, was born at Green Bay, Wis., on November 21, 1892, and entered railway service on June 5, 1906, as a call boy on the North Western at No. Fond du Lac, Wis., later serving at that point and at Fond du Lac, Wis., in various clerical positions until September, 1911, when he was transferred to the office of the auditor of disbursements at Chicago. In January, 1913, he returned to Fond du Lac as a car distributor, later serving in the accounting department and in the freight office. In May, 1917, he entered the U. S. Army, returning to the North Western in March, 1919, as a ticket and rate clerk at Fond du Lac. In January, 1925, he was promoted to city agent at Cleveland, Ohio, and in September, 1925, he was appointed district agent at Green Bay, Wis. Mr. Olson was appointed traveling agent at

Continued on next left-hand page

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THE best revenue producers are the locomotives which can be depended upon to turn in the maximum revenue miles per month. Nothing could be more significant than the fact that the best locomotive performance records are made on the roads which use HUNT-SPILLER *Air Furnace GUN IRON* for the vital wearing parts.

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Air Furnace

HUNT-SPILLER GUN IRON

New York on May 1, 1926, and on March 1, 1929, he was promoted to general agent at Kansas City, Mo. He was transferred



Albert O. Olson

to Pittsburgh on October 15, 1930, where he remained until his recent promotion.

Robert O. Small, whose appointment as traffic manager in charge of rates and divisions of the Chicago & North Western, with headquarters at Chicago, was announced in the *Railway Age* of February 8, was born at Deercreek, Ill., on August 10, 1889, and began railway service in the freight department of the North Western at Peoria, Ill., on June 2, 1910. He was later transferred to Indianapolis, Ind., and then served successively as chief clerk at Buffalo, N. Y., traveling agent at New Orleans, La., Sioux City, Iowa, and Green Bay, Wis. On April 1, 1920, Mr. Small was promoted to general agent at Indianapolis, Ind., and on April 1, 1924, he was appointed general agent at Philadelphia, Pa. He was promoted to general freight agent at Chicago on June 30, 1929, and on June 1, 1938, he was advanced to freight



Robert O. Small

traffic manager, the position he held until his recent appointment, effective February 1.

Allen R. Gould, whose promotion to traffic manager in charge of the sale of freight and passenger transportation of the Chicago & North Western, with headquarters in Chicago, was announced in the *Railway Age* of February 8, entered the service of the North Western on Febru-

ary 1, 1900, as chief clerk in the traffic offices at Cincinnati, Ohio. He subsequently served as traveling agent at Cincinnati, general agent at Cleveland, Ohio, and general agent at Chicago. During the first World War, Mr. Gould was appointed division freight and passenger agent in Madison, Wis., and upon the return of the railroads from government operation, he was promoted to general agent at New York. A short time later he was advanced to assistant passenger traffic manager, with headquarters at Chicago. In July, 1925, Mr. Gould was promoted to assistant freight and passenger traffic manager and in May, 1938, he was appointed assistant traffic manager. In September,



Allen R. Gould

1939, he was advanced to traffic manager, the position he held until his recent promotion, effective February 1.

ENGINEERING AND SIGNALING

L. G. Mosher, chief clerk to the chief engineer of the New York, Chicago & St. Louis (Nickel Plate) at Cleveland, Ohio, has been promoted to personnel assistant-maintenance of way, a newly created position, with headquarters at Cleveland.

Earl G. Wall, assistant division engineer on the Alton, has been promoted to division engineer, with headquarters as before at Bloomington, Ill., succeeding **Ralph H. Washburn**, whose death on January 28 was announced in the *Railway Age* of February 8.

Thomas L. Phillips, principal assistant engineer of the Western Pacific, has been promoted to chief engineer, with headquarters as before at San Francisco, Cal., succeeding **Col. Joseph White Williams**, whose death on February 4 was announced in the *Railway Age* of February 8.

SPECIAL

John Y. McLean, formerly general chairman of the Brotherhood of Railway Clerks, has been appointed director of labor relations of the Chicago, Rock Island & Pacific, with headquarters at Chicago, a newly created position. Mr. McLean was born in Calumet, Okla., on September 19, 1893, and graduated from Christian Brothers college, St. Louis, Mo., in 1911. His first employment was with the John Fox Construction Company of El Reno,

Oklahoma. In January, 1913, he entered railway service as a stenographer and clerk in the office of general superintendent of

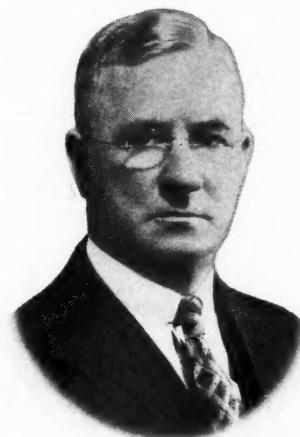


John Y. McLean

the Rock Island at El Reno, and subsequently served in various clerical capacities in the mechanical and operating offices at Chickasha, Okla., and El Reno. On March 1, 1918, he was chosen general chairman of the Brotherhood of Railroad Clerks when it was first organized on the Rock Island. In 1935 Mr. McLean was also elected international vice-president of the Brotherhood of Railway Clerks. He resigned as general chairman of the B. O. R. C. recently to accept the new position on the Rock Island.

MECHANICAL

H. R. Naylor, whose promotion to works manager of the Angus shops of the Canadian Pacific at Montreal, Que., was reported in the *Railway Age* of January 25, was born in Hull, England, and served an apprenticeship with the North Eastern Railway. He joined the Canadian Pacific in 1907 as patternmaker in the Angus



H. R. Naylor

shops and later worked in the drawing office. In 1911 he became steam heat inspector and in 1912 went to West Toronto as general foreman of the passenger car shops, returning to Montreal in 1913 as divisional car foreman of the eastern division, now Quebec district. Mr. Naylor returned to the Angus shops in 1915 as supervisor of piece work and in 1918 was attached to the chief mechanical engineer's

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St. Paul, St. Louis, Los Angeles, San Francisco, Seattle, Montreal.

staff at Windsor Station. He was appointed general car foreman of freight car work in 1919 and assistant works manager, car shops, in 1920, the position he held until his recent promotion.

W. A. Trayler, Jr., assistant master mechanic of the Columbus & Greenville, has been appointed master mechanic, with headquarters as before at Columbus, Miss., a change of title.

M. R. Benson, master mechanic on the Michigan Central at St. Thomas, Ont., has been promoted to assistant superintendent of equipment, a newly created position, with headquarters at Detroit, Mich. **E. J. Burck**, superintendent of shops at Jackson, Mich., has been appointed master mechanic at St. Thomas, succeeding Mr. Benson.

and **William E. Buck**, machine foreman at Jackson, has been advanced to superintendent of shops at that point, relieving Mr. Burck.

OBITUARY

J. M. Johnston, who retired in November, 1937, as fuel agent of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., died on January 29 at St. Mary's hospital, Richmond Heights, Mo.

H. P. Taylor, who retired on December 31, 1929, as assistant auditor of the St. Louis Southwestern of Texas, with headquarters at Tyler, Tex., died in Dallas, Tex., on January 23.

J. C. Hemming, assistant superintendent

of the Belt Railway Company of Chicago, with headquarters at South Chicago, Ill., died suddenly of a heart attack on February 11.

David L. Gray, consulting vice-president (traffic) of the Erie, with headquarters at New York, died on February 11 at his home in Scarsdale, N. Y., after an illness of several months, at the age of 71.

Edward Keith Kloman, secretary of the Bureau of Railway Economics, Association of American Railroads, died of a heart ailment in Washington, D. C., on February 10. He was 65 years old, and had been with the Bureau since 1916, having previously been in railway service with the Baltimore & Ohio from 1894 until that time.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 132 Monthly Reports of Revenues and Expenses Representing 136 Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF DECEMBER, 1940 AND 1939

Item	United States		Eastern District		Southern District		Western District	
	1940	1939	1940	1939	1940	1939	1940	1939
Miles of road operated at close of month	232,437	233,160	57,301	57,447	44,259	44,381	130,877	131,332
Revenues:								
Freight	\$308,350,352	\$276,271,397	\$133,634,442	\$122,398,725	\$61,264,862	\$55,716,719	\$113,451,048	\$98,155,953
Passenger	40,840,486	37,803,141	21,704,285	20,998,217	6,418,058	5,457,841	12,718,143	11,347,083
Mail	11,303,789	10,977,594	4,161,531	4,098,864	1,893,242	1,774,243	5,249,016	5,104,487
Express	5,879,319	5,731,733	2,017,646	2,354,755	1,234,251	1,079,784	2,627,422	2,297,194
All other operating revenues	15,417,581	14,396,387	7,657,142	7,272,811	2,075,634	1,895,826	5,684,805	5,227,750
Railway operating revenues	381,791,527	345,180,252	169,175,046	157,123,372	72,886,047	65,924,413	139,730,434	122,132,467
Expenses:								
Maintenance of way and structures	36,472,253	35,282,824	15,386,733	14,671,753	6,173,139	7,002,607	14,912,381	13,608,464
Maintenance of equipment	70,584,671	66,296,405	32,534,496	31,970,683	12,964,638	12,249,085	25,049,537	22,076,637
Traffic	9,150,790	9,236,971	3,231,189	3,354,505	1,875,502	1,806,461	4,044,099	4,076,005
Transportation—Rail line	135,354,079	124,689,026	62,046,587	58,152,900	22,558,781	21,142,877	50,748,711	45,393,249
Transportation—Water line	616,508	525,993					616,508	525,993
Miscellaneous operations	3,603,283	3,283,196	1,590,261	1,508,208	553,799	471,290	1,459,223	1,303,698
General	10,851,583	10,219,610	4,271,169	4,030,993	2,330,465	2,039,147	4,249,949	4,149,470
Transportation for investment—Cr.	462,984	527,492	127,290	176,041	66,829	71,153	268,865	280,298
Railway operating expenses	266,134,183	249,006,533	118,933,145	113,513,001	46,389,495	44,640,314	100,811,543	90,853,218
Net revenue from railway operations	115,657,344	96,173,719	50,241,901	43,610,371	26,496,552	21,284,099	38,918,891	31,739,249
Railway tax accruals	26,740,116	24,226,700	11,380,781	9,996,503	6,841,576	5,035,803	8,517,759	9,194,394
Railway operating income	88,917,228	71,947,019	38,861,120	33,613,868	19,654,976	16,248,296	30,401,132	22,084,855
Equipment rents—Dr. balance	7,560,746	7,654,521	3,660,001	3,890,290	237,419	191,870	3,663,326	3,572,361
Joint facility rent—Dr. balance	2,365,813	3,311,199	1,279,528	2,129,366	361,582	403,269	924,703	778,564
Net railway operating income	78,790,669	60,981,299	33,921,591	27,594,212	19,055,975	15,653,157	25,813,103	17,733,930
Ratio of expenses to revenues (per cent)	69.7	72.1	70.3	72.2	63.6	67.7	72.1	74.4
Depreciation included in operating expenses	17,540,206	16,690,640	7,315,667	7,207,717	3,506,447	3,320,614	6,718,092	6,162,309
Pay roll taxes	9,934,293	9,034,094	4,485,634	4,133,028	1,718,043	1,623,205	3,730,616	3,277,861
All other taxes	16,805,823	15,192,606	6,893,147	5,863,475	5,123,533	3,412,598	4,787,143	3,916,533

FOR TWELVE MONTHS ENDED WITH DECEMBER, 1940 AND 1939

Item	United States		Eastern District		Southern District		Western District	
	1940	1939	1940	1939	1940	1939	1940	1939
Miles of road operated at close of month*	232,779	233,462	57,364	57,559	44,298	44,456	131,117	131,447
Revenues:								
Freight	\$3,537,149,471	\$3,251,096,130	\$1,499,413,010	\$1,348,810,998	\$707,816,158	\$651,372,537	\$1,329,920,303	\$1,250,912,595
Passenger	417,268,962	416,903,149	226,825,345	232,376,073	59,591,334	53,474,157	130,852,283	131,052,919
Mail	101,086,894	99,012,370	38,668,908	37,893,602	17,189,100	16,917,735	45,228,886	44,201,033
Express	55,641,988	55,189,590	23,178,481	22,933,684	10,789,454	11,035,003	21,674,053	21,220,903
All other operating revenues	185,453,158	172,803,004	91,096,309	84,096,226	23,163,356	21,298,269	71,193,493	67,408,509
Railway operating revenues	4,296,600,473	3,995,004,243	1,879,182,053	1,726,110,583	818,549,402	754,097,701	1,598,869,018	1,514,795,959
Expenses:								
Maintenance of way and structures	497,086,654	466,830,717	194,857,389	177,082,150	91,319,281	83,294,079	210,909,984	206,454,488
Maintenance of equipment	818,975,349	765,935,263	370,481,410	339,832,637	159,900,613	145,713,407	288,593,326	280,389,219
Traffic	107,586,302	106,734,544	38,806,914	38,685,503	20,869,118	20,209,103	47,910,270	47,839,938
Transportation—Rail line	1,494,284,802	1,412,654,997	684,017,189	637,442,179	252,598,461	236,900,862	557,669,152	538,311,956
Transportation—Water line	6,673,267	5,138,914			5,293,818	4,577,310	6,673,267	5,138,914
Miscellaneous operations	38,950,969	37,711,138	17,159,045	16,337,296	25,579,327	24,373,279	16,498,106	16,796,532
General	130,449,524	127,568,819	51,835,722	50,660,773	25,189,633	24,034,475	52,534,767	52,534,767
Transportation for investment—Cr.	4,532,676	4,364,687	884,703	701,387	751,985	672,406	2,895,988	2,990,894
Railway operating expenses	3,089,474,191	2,918,209,705	1,356,272,966	1,259,339,151	554,808,633	514,395,634	1,178,392,592	1,144,474,920
Net revenue from railway operations	1,207,166,282	1,076,794,538	522,909,087	466,771,432	263,740,769	239,702,067	420,476,426	370,321,039
Railway tax accruals	396,353,538	355,677,557	167,434,565	149,887,513	90,875,019	74,452,175	138,043,954	131,337,869
Railway operating income	810,772,744	721,116,981	355,474,522	316,883,919	172,865,750	165,249,892	282,432,472	238,983,170
Equipment rents—Dr. balance	95,723,912	96,518,027	46,219,847	44,229,534	2,557,098	3,558,814	46,946,967	48,729,679
Joint facility rent—Dr. balance	32,930,345	35,769,876	18,053,158	19,709,414	3,545,583	3,841,525	11,331,604	12,137,937
Net railway operating income	682,118,487	588,829,078	291,201,517	252,863,971	166,763,069	157,849,553	224,153,901	178,115,554
Ratio of expenses to revenues (per cent)	71.9	73.0	72.2	73.0	67.8	68.2	73.7	75.6
Depreciation included in operating expenses	205,859,981	201,851,958	89,160,386	88,333,832	41,470,625	39,879,672	75,228,970	73,638,454
Pay roll taxes	116,344,523	105,583,323	51,228,705	45,719,562	20,682,355	18,518,941	44,433,463	41,344,820
All other taxes	280,009,015	250,094,234	116,205,860	104,167,951	70,192,664	55,933,234	93,610,491	89,993,049

* Represents an average of the mileage reported at the close of each month within the period.
Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.